



# XN8024R Hardware Owner's Manual

QSAN Technology Inc. [www.qsan.com](http://www.qsan.com)

© Copyright 2018 QSAN Technology, Inc. All rights reserved.

No part of this document may be reproduced or transmitted without written permission from QSAN Technology, Inc



## **Edition 1.0 (April 2018)**

This edition applies to QSAN XCubeNAS XN8024R NAS storage systems. QSAN believes the information in this publication is accurate as of its publication date. The information is subject to change without notice.

## **Trademarks**

QSAN, the QSAN logo, XCubeNAS, and QSAN.com are trademarks or registered trademarks of QSAN Technology, Inc.

Intel, Xeon, Pentium, Core, Celeron and Intel Inside logo are trademarks of Intel Corporation in the United States and other countries.

Other trademarks and trade names used in this document to refer to either the entities claiming the marks and names or their products are the property of their respective owners.

# Notices

---

The Information contained in this manual has been reviewed for accuracy. It may include typographical errors or technical inaccuracies. Changes are made to the document periodically. These changes will be incorporated in new editions of the publication. QSAN may make improvements or changes in the products. All features, functionality, and product specifications are subject to change without prior notice or obligation. All statements, information, and recommendations in this document do not constitute a warranty of any kind, express or implied.

Any performance data contained herein was determined in a controlled environment. Therefore, the results obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

This information contains examples of data and reports used in daily business operations. To illustrate them as completely as possible, the examples include the names of individuals, companies, brands, and products.

All of these names are fictitious and any similarity to the names and addresses used by an actual business enterprise is entirely coincidental.

## Regulatory Statements

### **CE Statement**

This device has been shown to be in compliance with and was tested in accordance with the measurement procedures specified in the Standards and Specifications listed below.

Technical Standard:                    EMC DIRECTIVE 2014/30/EU Class A  
(EN55032 / EN55024)

### **FCC Statement**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and uses in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Notice: The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equivalent.

## **BSMI Statement**

警告：這是甲類的資訊產品。在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

## **VCCI Statement**

この装置は、クラス A 情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

VCCI-A

## **KCC Statement**

A 급 기기 (업무용 방송통신기자재)

이 기기는 업무용 (A 급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의 하시기 바라며, 가정 외의 지역에서 사용하는 것을 목적으로 합니다.

(This equipment has approved for EMC on purpose of business use and there is possible for radio interference for home use.)

## Safety Warnings

1. The XCubeNAS can operate normally in the temperature of 0°C~40°C (31.99 ~ 103.99°F). Please make sure the environment is well-ventilated.
2. The power cord and devices connected to the XCubeNAS must provide a correct supply voltage (100-127V~/ 10A, 50-60Hz. 200-240V~/ 5A, 50-60Hz).
3. Do not place the XCubeNAS in direct sunlight or near chemicals. Make sure the temperature and humidity of the environment are in the optimized level.
4. Place the product right side up at all times.
5. Unplug the power cord and all connected cables before cleaning. Wipe the XCubeNAS with a dry towel. Do not use chemical or aerosol to clean the NAS.
6. Do not place any objects on the XCubeNAS for the server's normal operation and to avoid overheating.
7. Use the screws provided in the product package to lock the hard disks in the XCubeNAS when installing hard disks for proper operation.
8. Do not place the XCubeNAS near any liquid.
9. Do not place the XCubeNAS on any uneven surface to avoid falling off and damage.
10. Do not place the XCubeNAS on the ground and do not step on the system to prevent any potential damages.
11. Make sure the voltage is correct in the location where the XCubeNAS is installed. Contact the distributor or the local power supply company for the information.
12. Do not place any object on the power cord.
13. Do not attempt to repair the XCubeNAS in any occasions. Improper disassembly of the product may expose the users to electric shock or other risks. For any inquiries, please contact the distributor.
14. To remove all electrical current from the device, ensure that all power cords are disconnected from the power source.
15. The XCubeNAS should only be installed in restricted access location such as in the server room and maintained by the qualified service person. The server room is locked by key or keycard, or other means of security access and only a qualified service person is allowed to enter the server room.

**CAUTION: (English)**

Replacing incorrect type of battery will have the risk of explosion. Please replace the same or equivalent type battery use and dispose of used batteries according to the instructions.

---

**INFORMATION:**

QSAN provides a limited warranty for QSAN-branded hardware products:

- System hardware and peripheral product (s): **3** years limited warranty from date of original purchase.

For more detail warranty policy, please refer to QSAN official website:

<https://www.qsan.com/en/warranty.php>

---

# Table of Contents

---

|   |     |
|---|-----|
| Notices .....                                 | i   |
| Regulatory Statements .....                   | i   |
| Safety Warnings .....                         | iii |
| Preface .....                                 | 7   |
| About This Manual .....                       | 7   |
| Related Documents .....                       | 7   |
| Technical Support .....                       | 8   |
| Information, Tip and Caution .....            | 8   |
| Conventions .....                             | 9   |
| 1. Overview .....                             | 10  |
| 1.1. Package Contents .....                   | 10  |
| 1.2. XN8024R Product Overview .....           | 11  |
| 2. Hardware Overview .....                    | 13  |
| 2.1. Front and Rear Panel .....               | 13  |
| 2.2. System Disk Drive Numbering .....        | 16  |
| 2.3. Disk Drive Form Factors .....            | 16  |
| 3. Install the System Hardware .....          | 17  |
| 3.1. Install the Disk Drive in the Tray ..... | 17  |
| 3.2. Upgrade Memory .....                     | 21  |
| 3.3. Install the Optional Host Card .....     | 25  |
| 3.4. Replace System Fan .....                 | 28  |
| 3.5. Replace Malfunctioning PSU .....         | 29  |
| 3.6. Replace System Controller .....          | 29  |
| 3.7. Install the Rail Kits .....              | 31  |
| 3.8. Connect the System to the Host .....     | 34  |
| 3.9. Start Up Your System .....               | 35  |
| 4. Discover and Install QSM .....             | 37  |
| 5. Restart/Shutdown/Logout QSM .....          | 40  |
| 6. Reset to Default .....                     | 42  |
| 7. LED Indicator Table .....                  | 45  |
| 7.1. XN8024R LED Indicator Table .....        | 45  |
| 7.2. Host Card LED Indicator Table .....      | 48  |
| 8. Buzzer Indicator Table .....               | 49  |

|       |   |    |
|-------|---|----|
| 9.    | Deployment Topology .....               | 50 |
| 9.1.  | Expansion Configuration Rules .....     | 50 |
| 9.2.  | Cabling the System .....                | 51 |
| 10.   | Quick Maintenance.....                  | 54 |
| 10.1. | Replace Fan Module .....                | 55 |
| 10.2. | Replace Power Supply Unit .....         | 56 |
| 11.   | Support and Other Resources .....       | 58 |
| 11.1. | Getting Technical Support.....          | 58 |
| 11.2. | Documentation Feedback .....            | 59 |
|       | Appendix .....                          | 60 |
|       | End-User License Agreement (EULA) ..... | 60 |
|       | Recommended Optional Module List .....  | 63 |
|       | Expansion Enclosure List.....           | 64 |



# Preface

---

## About This Manual

This manual provides technical guidance for designing and implementing QSAN XN8024R system, and it is intended for use by system administrators, NAS designers, storage consultants, or anyone who has purchased this product and is familiar with servers and computer networks, network administration, storage system installation and configuration, network attached storage management and relevant protocols.

**CAUTION:**

Do NOT attempt to service, change, disassemble or upgrade the equipment's components by yourself. Doing so may violate your warranty and expose you to electric shock. Refer all servicing to authorized service personnel. Please always follow the instructions in this owner's manual.

---

## Related Documents

There are related documents which can be downloaded from the website.

- XCubeNAS QIG (Quick Installation Guide): <https://www.qsan.com/en/download.php>
- Compatibility Matrix: <https://www.qsan.com/en/download.php>
- XCubeNAS QSM 3.1 user manual: <https://www.qsan.com/en/download.php>
- Online FAQ: <https://www.qsan.com/en/faq.php>
- White Papers: <https://www.qsan.com/en/download.php>
- Application Notes: <https://www.qsan.com/en/download.php>

## Technical Support

Do you have any questions or need help troubleshooting a problem? Please contact QSAN Support, we will reply to you as soon as possible.

- Via the Web: [http://www.qsan.com/en/contact\\_support.php](http://www.qsan.com/en/contact_support.php)
- Via Telephone: +886-2-7720-2118 extension 136  
(Service hours: 09:30 - 18:00, Monday - Friday, UTC+8)
- Via Skype Chat, Skype ID: qsan.support  
(Service hours: 09:30 - 02:00, Monday - Friday, UTC+8, Summertime: 09:30 - 01:00)
- Via Email: [support@qsan.com](mailto:support@qsan.com)

## Information, Tip and Caution

This manual uses the following symbols to draw attention to important safety and operational information.

**INFORMATION:**

INFORMATION provides useful knowledge, definition, or terminology for reference.

**TIP:**

TIP provides helpful suggestions for performing tasks more effectively.

**CAUTION:**

CAUTION indicates that failure to take a specified action could result in damage to the system.

---

## Conventions






The following table describes the typographic conventions used in this manual.

| Conventions           | Description   |
|-----------------------|---|
| <b>Bold</b>           | Indicates text on a window, other than the window title, including menus, menu options, buttons, fields, and labels.<br>Example: Click the <b>OK</b> button.          |
| <i>&lt;Italic&gt;</i> | Indicates a variable, which is a placeholder for actual text provided by the user or system.<br>Example: copy <i>&lt;source-file&gt;</i> <i>&lt;target-file&gt;</i> . |
| [ ] square brackets   | Indicates optional values.<br>Example: [ a   b ] indicates that you can choose a, b, or nothing.  |
| { } braces            | Indicates required or expected values.<br>Example: { a   b } indicates that you must choose either a or b.  |
| vertical bar          | Indicates that you have a choice between two or more options or arguments.  |
| / Slash               | Indicates all options or arguments.   |
| underline             | Indicates the default value.<br>Example: [ <u>a</u>   b ]   |

## 1. Overview

Thank you for purchasing QSAN XN8024R. The XN8024R is next generation high-efficiency NAS system which is designed for composite SMB and enterprise applications for enterprise and SMB users. Before setting up your new XN8024R, please check the package contents to verify those items below. Besides, make sure to read the safety instructions carefully.

### 1.1. Package Contents

| Main Unit *1  |   |
|---|---|
|  |   |
| AC Power cord *2  | RJ45 Cable *1   |
|  |  |
| Screws for 3.5" drives (#6-32) *100   | Screws for 2.5" drives (M3) *100  |
|  |  |

## 1.2. XN8024R Product Overview

QSAN XN8024R is a powerful NAS system, composed of the system hardware and the QSM operating system, designed for both enterprise and SMB users. The system hardware is a modular design and FRU (field replacement unit) optimized, features the Intel enterprise level Xeon CPU and up to 128GB of DDR4 ECC RAM. All the hardware modules are inside the rackmount chassis including: system controllers, front panel, rear panel, redundant power supply and fan modules, and expansion slots for optional 10GbE or 1GbE host cards. Following is the feature list of XN8024R:

- With Intel® Xeon® 2.2GHz Quad-Core Processor.
- SAS 12Gb/s and SATA 6Gb/s (backward compatible with SAS 6Gb/s and SATA 3Gb/s) supported.
- 8GB DDR4 ECC U-DIMM RAM (Max 32GB \*4 = 128GB).
- Built-in 1GbE Network Interface \*1 and 10GbE Network Interface \*2.
- Built-in 12Gb/s SAS wide ports \*2 for capacity expansion.
- Tool-less design for fan-module and power supply replacing.

Following tables are hardware specifications of XN8024R.

| Model Name                 | XN8024R  |
|----------------------------|--|
| Form Factor                | Rackmount, 4U 24bay  |
| CPU                        | Intel® Xeon® 2.2GHz Quad-Core Processor  |
| RAM                        | 8GB DDR4 ECC U-DIMM (Max 128GB)<br>Note: The pre-install memory modules may need to be replaced when expanding the memory. |
| USB                        | USB 3.0 x2 (Rear)<br>USB 2.0 x1 (Front)  |
| Flash                      | 8GB SATA DOM   |
| Tray type                  | 3.5" HDD tray with lock x24  |
| No. of Internal Hard Disks | 24 (LFF <sup>1</sup> disk)   |
| Max. Raw Capacity          | 12TB x 24 = 288 TB (LFF=12TB)  |
| Hard Drive Interface       | SAS 12Gb/s and SATA 6Gb/s (backward compatible with SATA 3Gb/s)  |

|                                       |  |
|---------------------------------------|--|
| <b>Host Connectivity</b>              | Optional:<br>4 x 10GbE iSCSI (SFP+) ports<br>2 x 10GbE iSCSI (RJ45) ports<br>4 x 1GbE iSCSI (RJ45) ports |
| <b>Expansion Connectivity</b>         | Built-in 2 x 12Gb/s SAS wide ports (SFF-8644)  |
| <b>Ethernet Ports</b>                 | 1 GbE LAN (RJ45) x1<br>10 GbE LAN (RJ45) x2  |
| <b>PSU</b>                            | 770W 1+1 redundant<br>100-127V~/ 10A, 50-60Hz<br>200-240V~/ 5A, 50-60Hz                                  |
| <b>Dimension<br/>(H x W x D) (mm)</b> | 19" Rack mount<br>170.3 x 438 x 515  |
| <b>Agency Certifications</b>          | FCC Class A • CE Class A • BSMI Class A • VCCI Class A • RCM Class A •<br>KCC Class A                    |

Note: Model specifications are subject to change without notice. Please refer to <http://www.qsan.com> for the latest information.

<sup>1</sup> LFF : Large Form Factor / 3.5" disk drive

## 2. Hardware Overview

---

This chapter outlines the key hardware components of the XN8024R system. After reading this chapter, you will have a basic understanding of each XN8024R hardware component and give you the ability to be able to successfully configure and operate your XN8024R system. Following is the key components of XN8024R:

- Front and Rear Panel
- System Controller
- System Disk Drive Numbering
- Disk Drive Form Factors

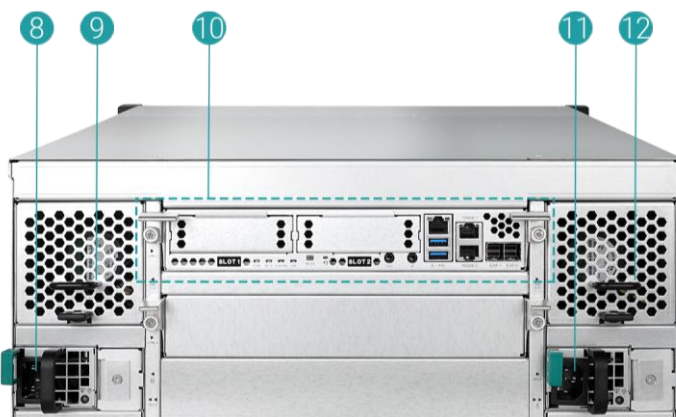
### 2.1. Front and Rear Panel

The figure below contains the information about buttons and indicators modules.

#### Front Panel



## Rear Panel



## System Controller

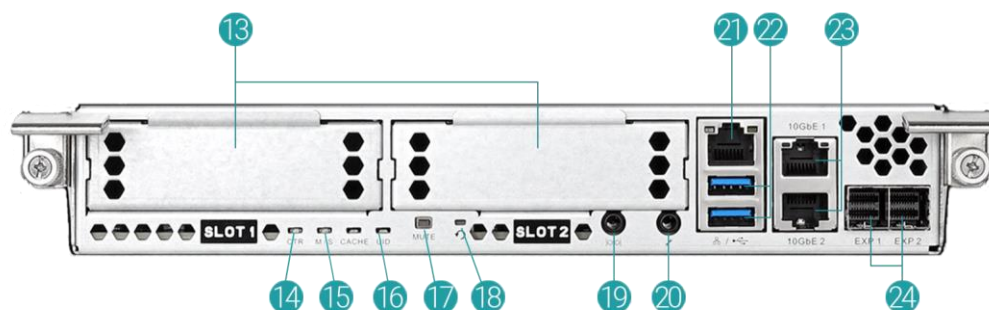


Table 2-1 Descriptions of System Controls and Indicators

| Number | Location | Description                                  |
|--------|----------|--|
| 1      | Front    | Power Button/LED Indicator for Power Status  |
| 2      |          | Unique Identifier (UID) Button/LED Indicator |
| 3      |          | System Access LED Indicator                  |
| 4      |          | System Status LED Indicator                  |
| 5      |          | USB 2.0 Port                                 |
| 6      |          | Disk Drive Power LED Indicator               |
| 7      |          | Disk Drive Status LED Indicator              |
| 8      | Back     | Power Supply Unit 1                          |
| 9      |          | Fan Module 1                                 |

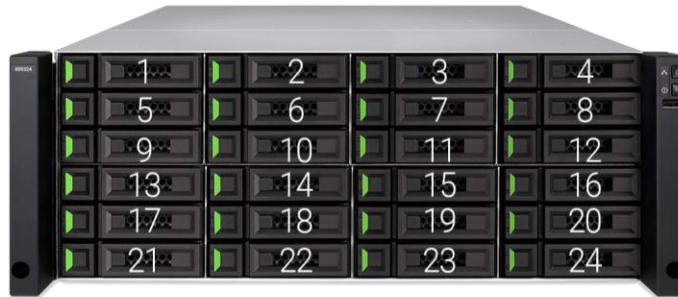


|    |                      |                                       |
|----|----------------------|---------------------------------------|
| 10 |                      | Controller Module                     |
| 11 |                      | Power Supply Unit 2                   |
| 12 |                      | Fan Module 2                          |
| 13 | System<br>Controller | Additional Host Card Expansion Slot   |
| 14 |                      | Controller Status LED                 |
| 15 |                      | Master/Slave LED                      |
| 16 |                      | Unique Identifier (UID) LED Indicator |
| 17 |                      | Mute Button                           |
| 18 |                      | Reset Button                          |
| 19 |                      | Console Port (3.5mm jack to RS232)    |
| 20 |                      | Service Port                          |
| 21 |                      | Gigabit LAN Port                      |
| 22 |                      | USB 3.0 Port                          |
| 23 |                      | 10GbE iSCSI (RJ45) Port               |
| 24 |                      | 12Gb/s SAS Wide Port (SFF8644)        |

For a better understanding of the related colors and behaviors of each indicator on the front panel, please refer to the chapter 7. [LED Indicator Table](#) section.

## 2.2. System Disk Drive Numbering

Figures below illustrate XN8024R system disk drive numbering. You can find a disk drive numbering sticker on the top cover of the system chassis.



## 2.3. Disk Drive Form Factors

QSAN has tested and approved the popular SAS HDDs, SATA HDDs and SSDs models available on the market, you have the highest flexibility to choose the most advanced HDDs or SSDs available from the manufacturers or purchase the best cost/performance SAS/SATA HDDs or SSDs from the market, it will significantly reduce your IT infrastructure investment cost. Please refer to the following website for the compatibility of HDD and SSD: <https://www.qsan.com/en/download.php>

Table 2-2 Supported Disk Drive Types

| Form Factor   | Number of Tray | Supported Drive Type     |
|---------------|----------------|--------------------------|
| 3.5" LFF Tray | 24             | 3.5" SAS/NL-SAS/SATA HDD |
|               |                | 2.5" SAS/SATA SSD        |



### TIP:

1. 2.5" SAS/SATA drives can also be installed on 3.5" LFF trays.
2. If you would like to maximize volume space with RAID being set, we recommend that all your installed drives be the same size.
3. Please contact a QSAN authorized reseller for details purchasing information.

## 3. Install the System Hardware

---

This chapter will show you the procedure of XN8024R hardware installation and initial configuration.

### 3.1. Install the Disk Drive in the Tray

#### 3.1.1. Tools and Parts for Drive Installation

- A screwdriver (Phillips #1).
- At least one 3.5" or 2.5" SAS/SATA drive (please visit [www.qsan.com](http://www.qsan.com) for compatible drive models).

**CAUTION:**

Please ensure that there is no data on the disk to prevent important data being formatted.

---

#### 3.1.2. LFF Disk Drive Description

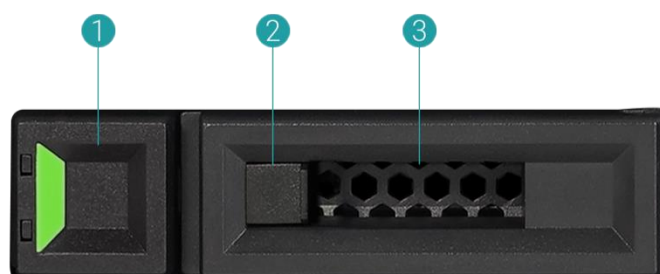


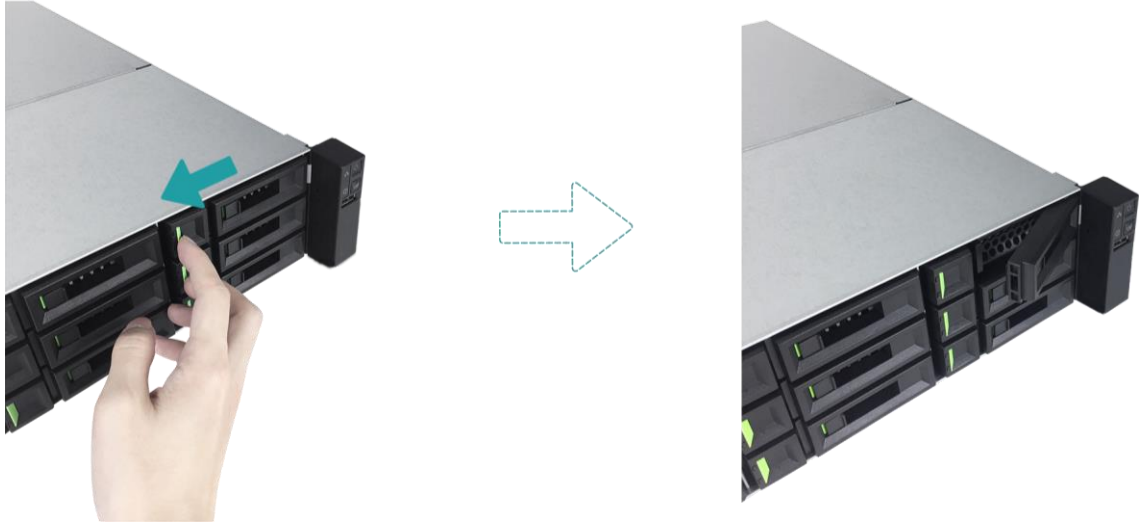
Table 3-1 Front Side Components of LFF Disk Drive Trays

| Item Number | Description     |
|-------------|-----------------|
| 1           | Release Button  |
| 2           | Disk Drive Lock |
| 3           | Carrier Handle  |

## 3.1.3. Install the Disk Drive (LFF)

1. Open the drive tray.

- ① Push the release button from right to left to open the carrier handle.

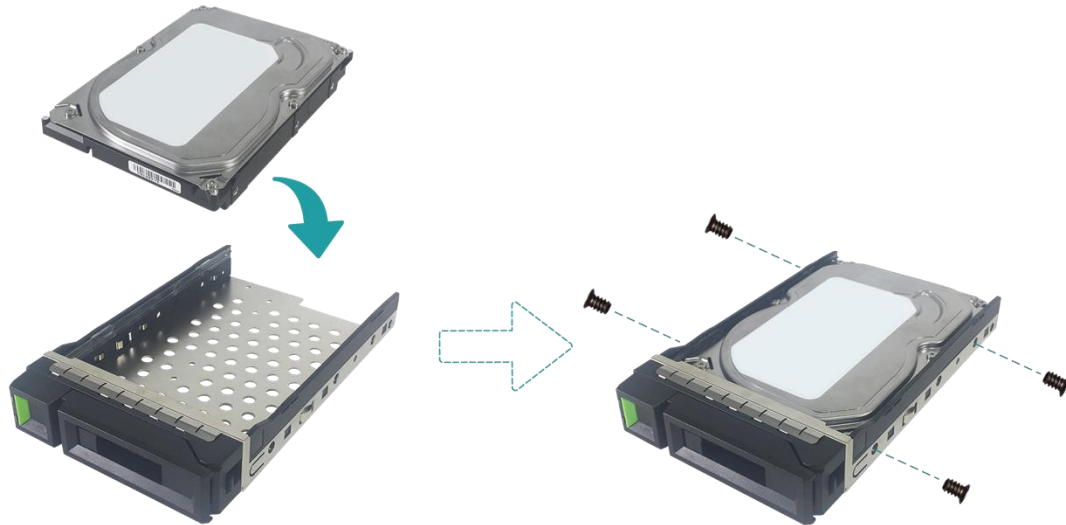


- ② Hold the carrier handle and pull out the disk drive tray, repeat the steps above to remove other disk drive trays.



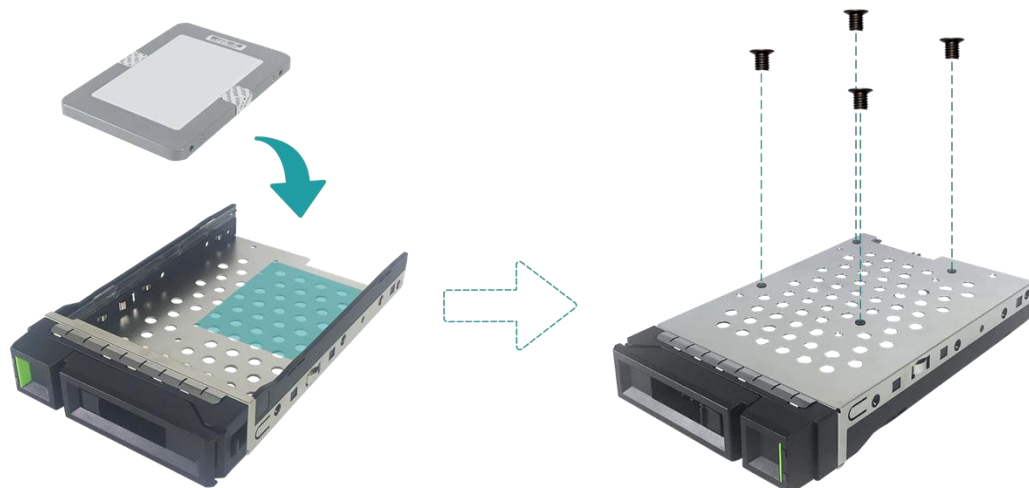
## 2. Install a 3.5" HDD into an LFF tray.

- ① Place the drive on the tray.
- ② Secure the drive from the four spots indicate below with four #6-32 screws provided in the accessory box.



## 3. Install a 2.5" SSD into an LFF tray.

- ① Place the drive in the blue area (shown below) of the tray.
- ② Turn the tray upside down and secure the drive from the bottom of the tray with four M3 screws provided in the accessory box.

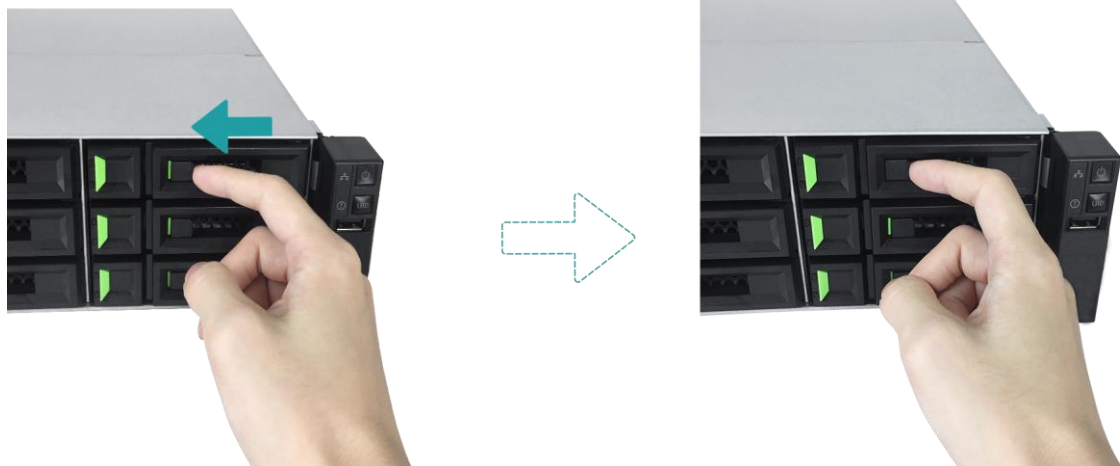


## 4. Install a LFF tray into the XCubeNAS.

- ① Insert the loaded drive tray into the empty drive bay all the way to the back until the carrier handle can be closed.



- ② Push the disk drive lock from right to left to lock the drive tray.



### TIP:

Make sure the tray is pushed in all the way, otherwise the drive might not function properly.

## 5. Repeat the steps above to install all prepared drives.

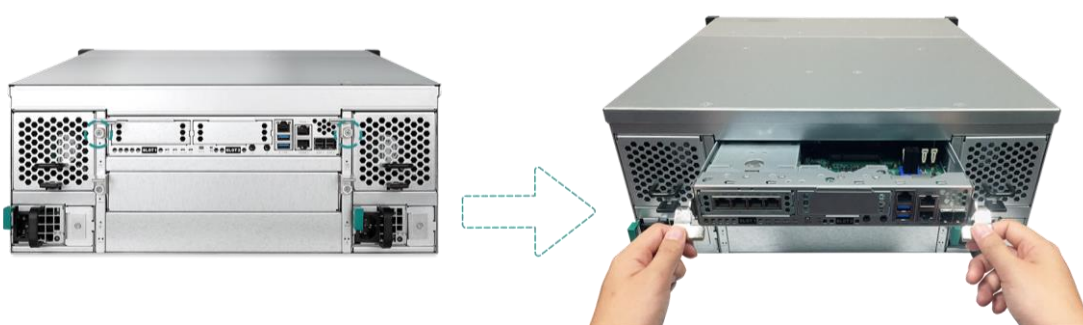
## 3.2. Upgrade Memory

**CAUTION:**

- The following instructions should only be performed by an authorized and trained technician. Strictly adhere to the instructions to install a RAM module on the NAS.
- Before you start, please ensure that you turn off the NAS, disconnect the power adapter, network cable(s), and also remove any other device/cable that is attached to the NAS.

XN8024R is installed with two 4GB ECC DDR4 memory module by default. If you want to install, check, or remove a memory module on your XCubeNAS, please follow the steps as illustrated below:

1. Shutdown your XCubeNAS and disconnect power, network cable(s) or any other device/cable that is attached to your system to prevent any possible damages.
2. Remove the controller from the system chassis.
  - ① Loosen the screws below the release lever on the back of the XCubeNAS.
  - ② Pull down both release lever at the same time, then pull out the controller.
  - ③ Use one hand to hold one end of the controller module (the side with release levers) and the other hand hold the bottom of the controller. Pull out the controller module until it is free from the system chassis.

**CAUTION:**

The controller module is very heavy and fragile, please use both hands while installing, removing, or carrying the controller module. Recommended place for removing the controller module: the system is in a well secured rack or on a stable surface.

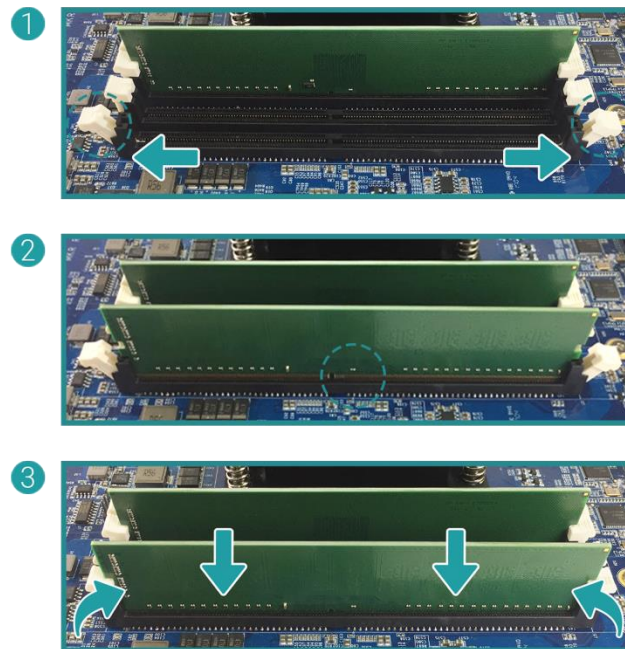
---

When you remove the controller from the system chassis, the sensitive internal components are exposed. Please avoid touching anything other than the memory module when you add or remove a memory module.

---

### 3. Insert a new memory module into the slot.

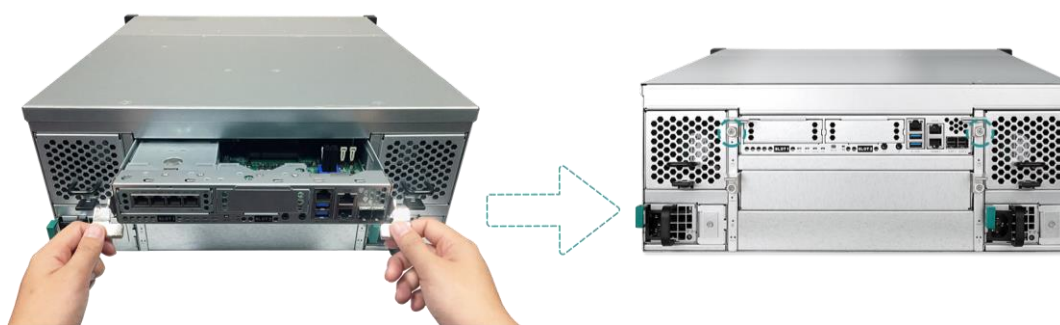
- ① Push the retaining clips on the slot out to the sides.
- ② Align the notch on the gold edge of the module with the notch in the memory slot.
- ③ Push down on the memory module with firm and even pressure. The retaining clips will snap into position as the module is correctly inserted.



### 4. Put back the controller you removed in step 2.

- ① Align the controller with the chassis, then gently push the controller all the way to the back.
- ② Push back and release lever then fasten the screws on the back of the XCubeNAS.





## 5. Remove memory module.

- ① Follow step 1 and 2 above to shut down your XCubeNAS, and disconnect the cables, and then remove the controller.
- ② Disengage the memory retaining clips by pushing them outwards, and the module will pop out of the slot.
- ③ Follow step 4 above to put back the controller.

The following table is the suggested installation combination for memory.

*Table 3-2 The Suggested Installation Combination for Memory.*

| Pair #1 |         | Pair #2 |         | Total Memory  |
|---------|---------|---------|---------|---------------|
| Slot #1 | Slot #3 | Slot #2 | Slot #4 |               |
| 4GB     | 4GB     | -       | -       | 8GB (Default) |
| 4GB     | 4GB     | 4GB     | 4GB     | 16GB          |
| 8GB     | 8GB     | -       | -       | 16GB          |
| 8GB     | 8GB     | 8GB     | 8GB     | 32GB          |
| 16GB    | 16GB    | -       | -       | 32GB          |
| 16GB    | 16GB    | 16GB    | 16GB    | 64GB          |
| 32GB    | 32GB    | -       | -       | 64GB          |
| 32GB    | 32GB    | 32GB    | 32GB    | 128GB         |



### CAUTION:

To ensure the system stability, you **MUST** install genuine QSAN memory modules for system memory size expansion.



## TIP:

In order to achieve dual-channel RAM performance, it is suggested that you install memory modules with the same capacity in pairs.

Pair 1: Slot #1 and Slot #3

Pair 2: Slot #2 and Slot #4

Memory module support:

**1 RAM:** Supports one module inserted into any slot as single-channel memory configuration.

**2 RAMs:** Supports two modules inserted into slot #1 and slot #3 or slot #2 and slot #4 as one pair of dual-channel memory configuration.

**4 RAMs:** Supports four modules inserted into all the slots as two pairs of dual-channel memory configuration.



## INFORMATION:

- (1) If you want to purchase the optional memory, please contact your nearest local reseller or visit QSAN official website: <https://qsan.com/location>
- (2) See the recommended memory module on [Appendix: Recommended Optional Module List](#)

### 3.3. Install the Optional Host Card

Your XCubeNAS XN8024R comes with two on-board 10GbE ports and one on-board 1GbE port on the controller, with two additional host card expansion slots. If you would like to expand the number of host ports, you can purchase QSAN's optional host cards including 10GbE via SFP+, 10GBASE-T, or 1GBASE-T host cards. To install a host card, please follow the steps as illustrated below:



#### CAUTION:

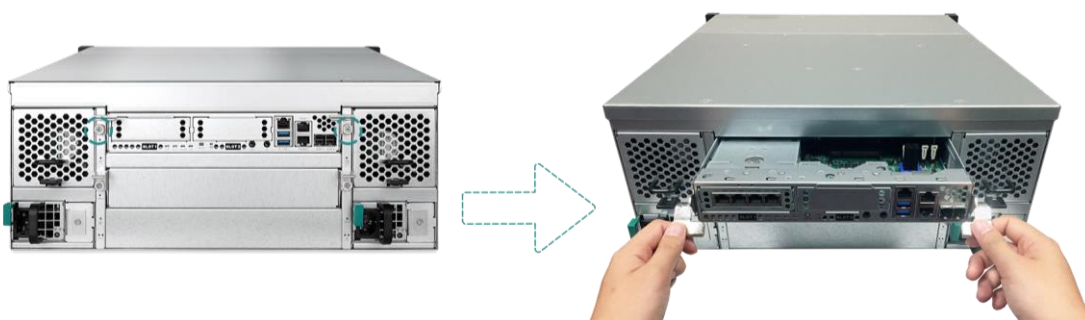
1. You must remove the controller module from the system chassis before installing or removing the host card.
2. The host card CANNOT be hot-plugged in the controller module.



#### TIP:

Please note that if you change the host card type on the controller, the network setting may change depending on your system configuration.

1. Shutdown your XCubeNAS and disconnect power, network cable(s) or any other device/cable that is attached to your system to prevent any possible damages.
2. Remove the controller from the system chassis.
  - ① Loosen the screws below the release lever on the back of the XCubeNAS.
  - ② Pull down both release lever at the same time, then pull out the controller.
  - ③ Use one hand to hold one end of the controller module (the side with release levers) and the other hand hold the bottom of the controller. Pull out the controller module until it is free from the system chassis.



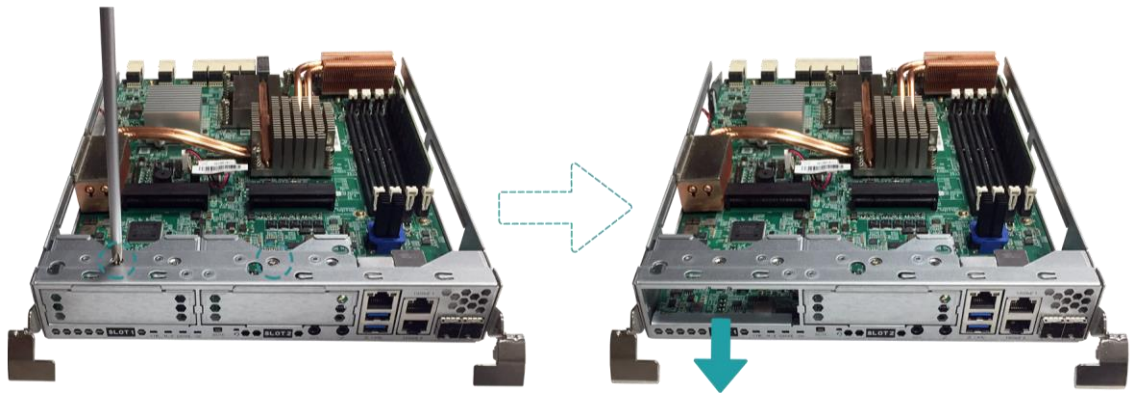


## CAUTION:

When you remove the controller from the system chassis, the sensitive internal components are exposed. Please avoid touching any irrelevant components to prevent damage.

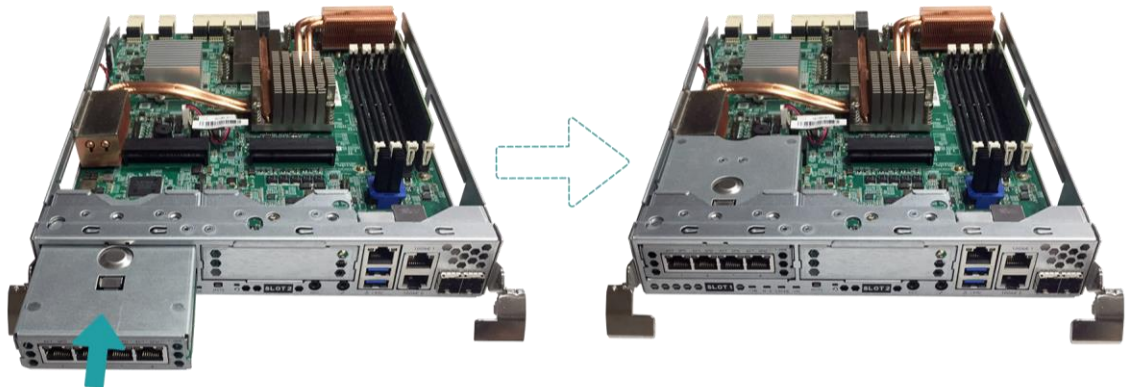
### 3. Remove the dummy host card bracket.

- ① Loosen the screw(s) on the controller cage.
- ② Remove the dummy host card bracket.



### 4. Install the host card.

- ① Align the host card to the slot, then gently push all the way into the controller cage until you hear a “click” sound. Make sure the host card connector is well connected to the controller module.



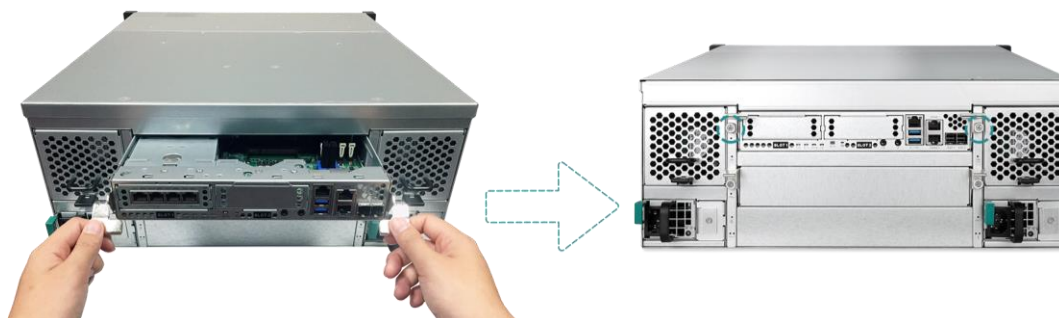


**CAUTION:**

Make sure the connector is fully inserted. Otherwise, the network expansion card might not be able to function properly.

5. Put back the controller you removed in step 2.

- ① Align the controller with the chassis, then gently push the controller all the way to the back.
- ② Push back and release lever then fasten the screws on the back of the XCubeNAS.



**INFORMATION:**

- (1) If you want to purchase the optional adapter card, please contact your nearest local reseller or visit QSAN official website:  
<https://qsan.com/location>
- (2) See the recommended adapter card on [Appendix: Recommended Optional Module List](#)

## 3.4. Replace System Fan

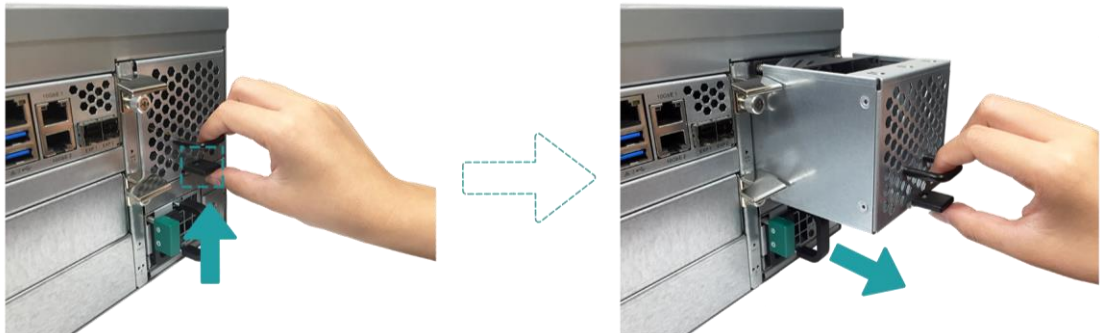
If a system fan failed to function, please see the instructions below to replace the malfunctioning fan:



### CAUTION:

The fan module is a heavy and fragile; please use both hands while installing, removing, or carrying them. Recommended place for removing the power supply unit: the system is in a well-secured rack or on a stable surface.

1. Shutdown your XCubeNAS and disconnect power, network cable(s) or any other device/cable that is attached to your system to prevent any possible damages.
2. Remove the fan module from XCubeNAS.
  - ① Press the lever of the fan module at the rear panel in the indicated direction.
  - ② Pull out the fan module from the XCubeNAS.



3. Prepare a new fan module, and push it back to the slot until you hear a 'click' sound. Please make sure that the direction of the fan module is correctly installed, to prevent any potential damage caused by improper installation.



## 3.5. Replace Malfunctioning PSU

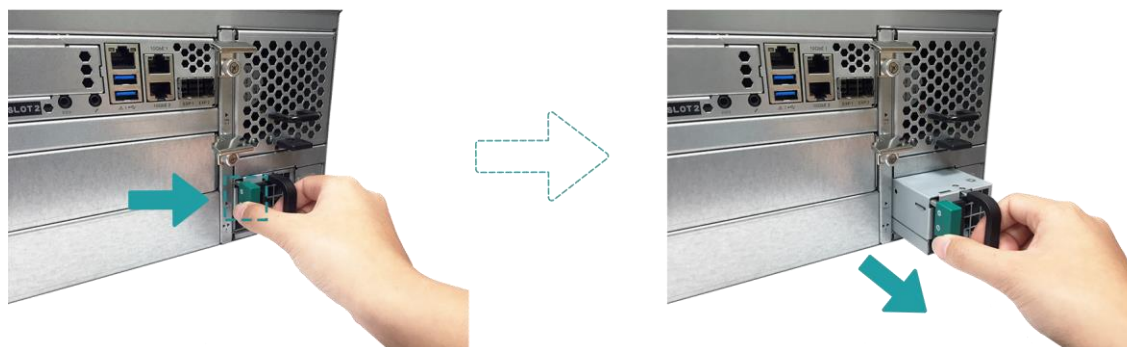
XCubeNAS comes with two redundant Power Supply Units (PSU) that can be hot swapped when the PSU is not functioning. If a PSU or its fan failed to function, please see the instructions below to replace the malfunctioning PSU:



### CAUTION:

The power supply unit is a heavy and fragile; please use both hands while installing, removing, or carrying them. Recommended place for removing the power supply unit: the system is in a well-secured rack or on a stable surface.

1. Unplug the power cord from the PSU to be replaced.
2. Remove the PSU from XCubeNAS.
  - ① Push the lever of the PSU at the rear panel in the indicated direction.
  - ② Pull out the PSU from the XCubeNAS.



3. Prepare a new PSU, and push it back to the slot until you hear a click. Please make sure that the direction of the PSU is correctly installed, to prevent any potential damage caused by improper installation.

## 3.6. Replace System Controller

If the system failed to function, please contact QSAN support for further examination. If you need to replace the system controller, please see the instructions below:



### CAUTION:

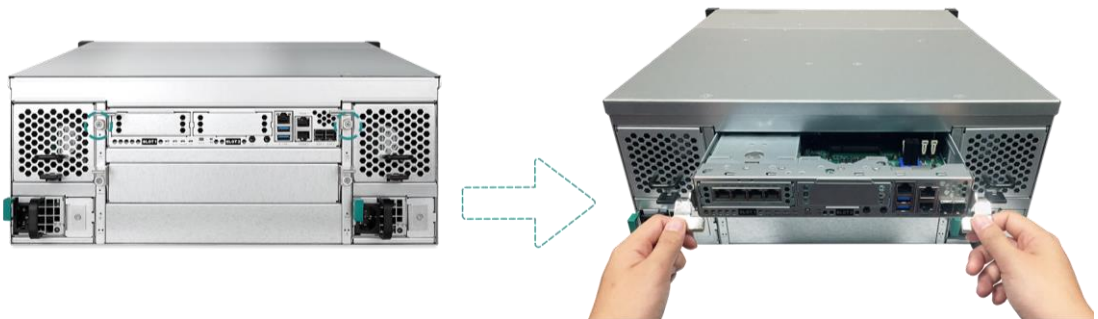
1. The controller module is heavy and fragile, please use both hands while installing, removing, or carrying the controller module.

---

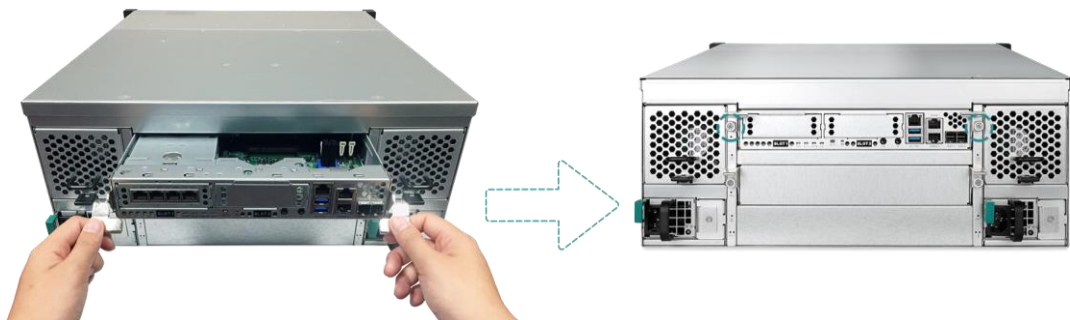
Recommended place for removing the controller module: the system is in a well secured rack or on a stable surface.

2. The controller must be installed into slot 1 (the top slot of the system from the rear view).
- 

1. Shutdown your XCubeNAS and disconnect power, network cable(s) or any other device/cable that is attached to your system to prevent any possible damages.
2. Remove the controller from the system chassis.
  - ① Loosen the screws below the release lever on the back of the XCubeNAS.
  - ② Pull down both release lever at the same time, then pull out the controller.
  - ③ Use one hand to hold one end of the controller module (the side with release levers) and the other hand hold the bottom of the controller. Pull out the controller module until it is free from the system chassis.



3. Prepare a new controller module, insert back to the system chassis.
  - ③ Align the controller with the chassis, then gently push the controller all the way to the back.
  - ④ Push back and release lever then fasten the screws on the back of the XCubeNAS.





## 3.7. Install the Rail Kits

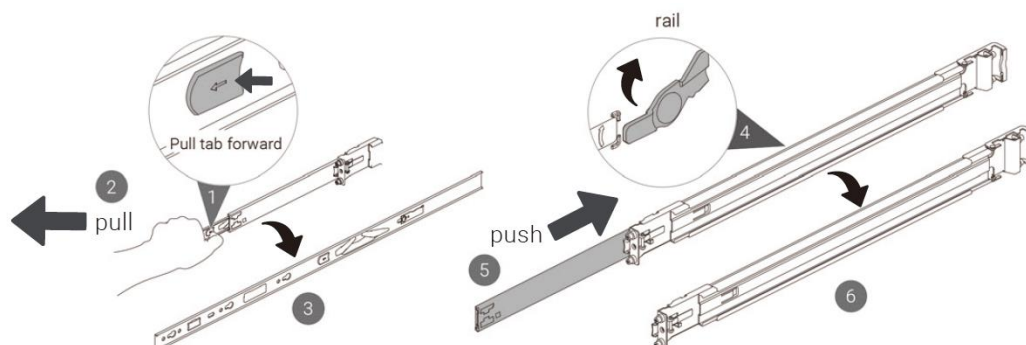
Rail kit is an optional accessory XCubeNAS, if you did not purchase QSAN qualified rail kit, you can skip the steps of the system installation tasks. If you want to purchase QSAN qualified rail kit: full extension and thin slide with tool-less bracket: AA612508 series, please contact QSAN authorized reseller.



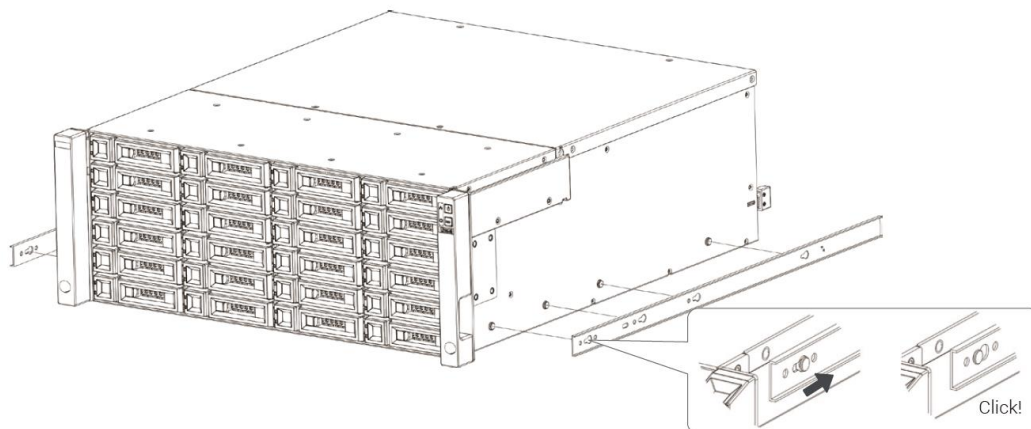
### CAUTION:

The populated XCubeNAS system can be very heavy, to avoid any potential injury or harm to installers, or damage to the system, we strongly recommend at least two certified operators or engineers perform the system installation.

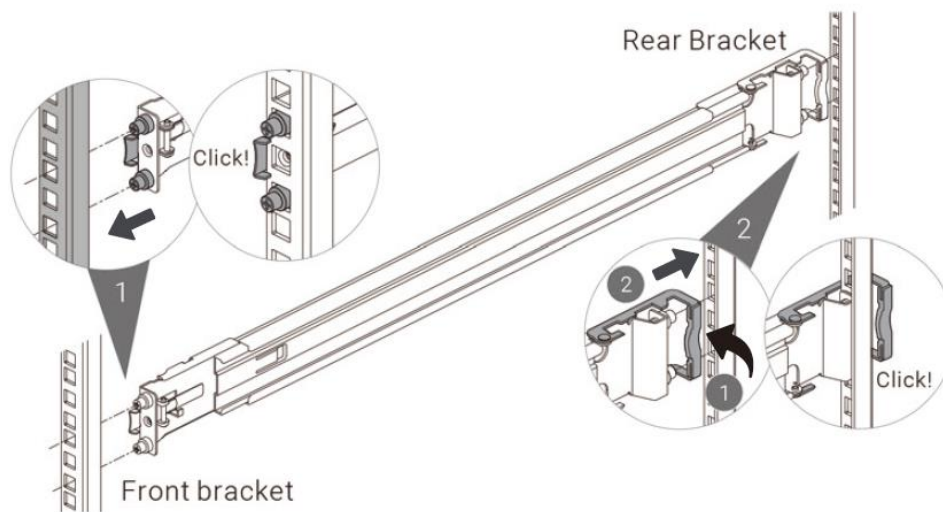
1. Pull the inner rail out and slide the intermediate rail back.



2. Install the inner member onto the chassis.

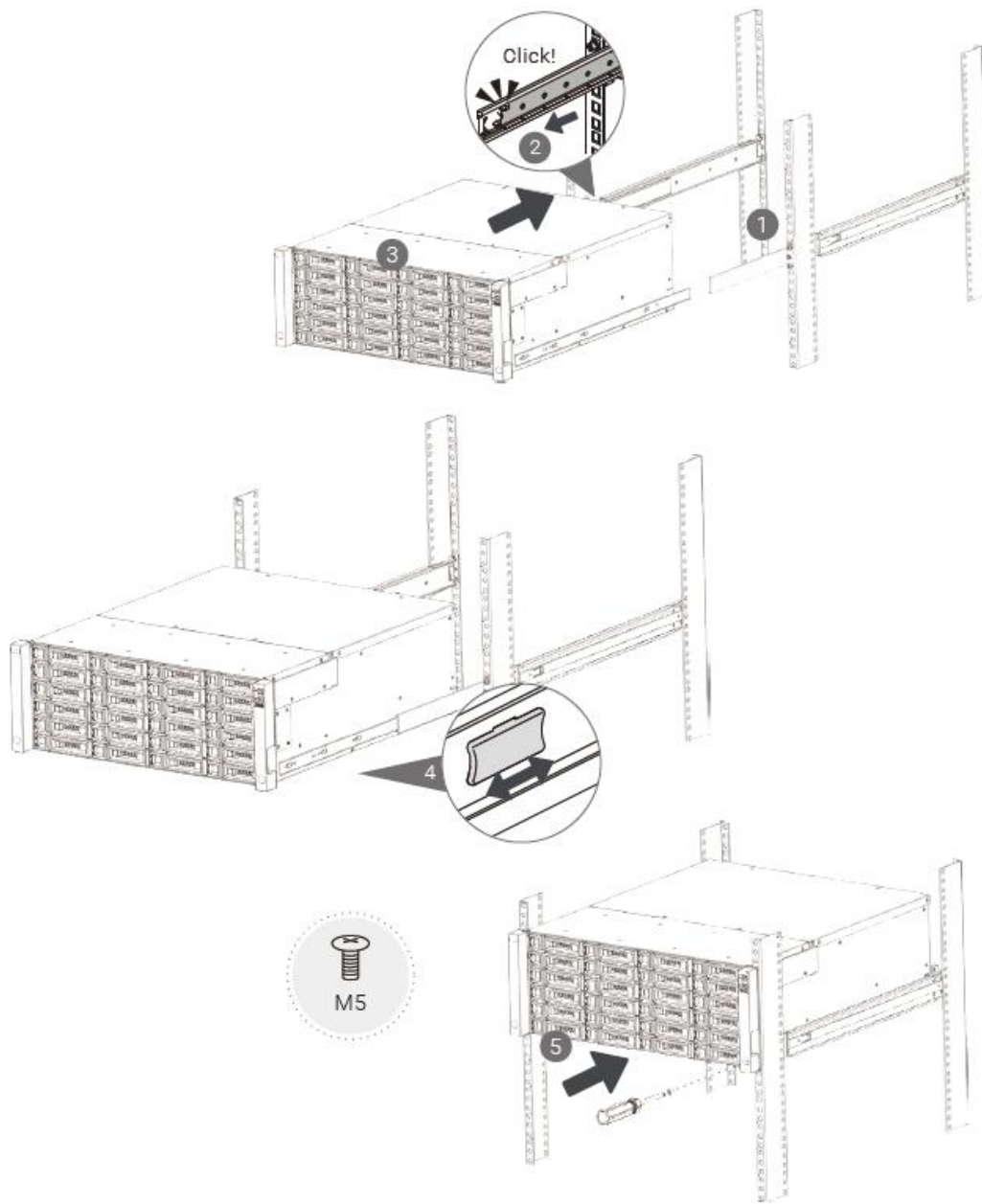


3. Install the outer rail/bracket assembly to the frame. Repeat this step for the other side.



#### 4. Insert the chassis to complete the installation

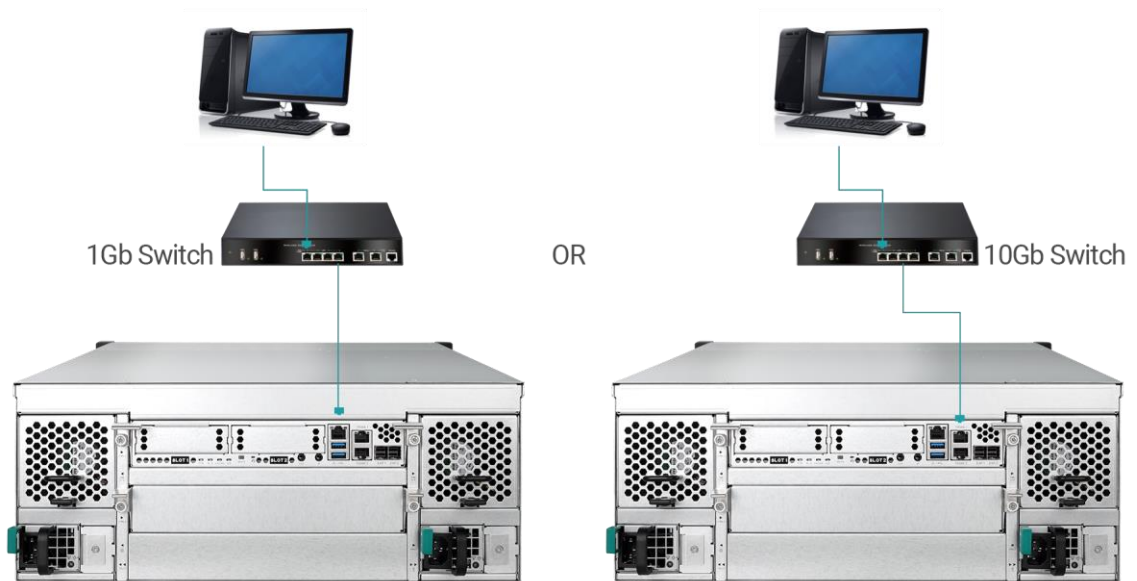
- ① Pull the middle member fully extended in locked position.
- ② Ensure ball bearing retainer is located at the front of the middle member.
- ③ Insert chassis into the middle-outer member.
- ④ When hitting the stop, pull/push release tab to unlock and retract chassis into rack.
- ⑤ Use M5x20 screws to fasten the chassis ear.



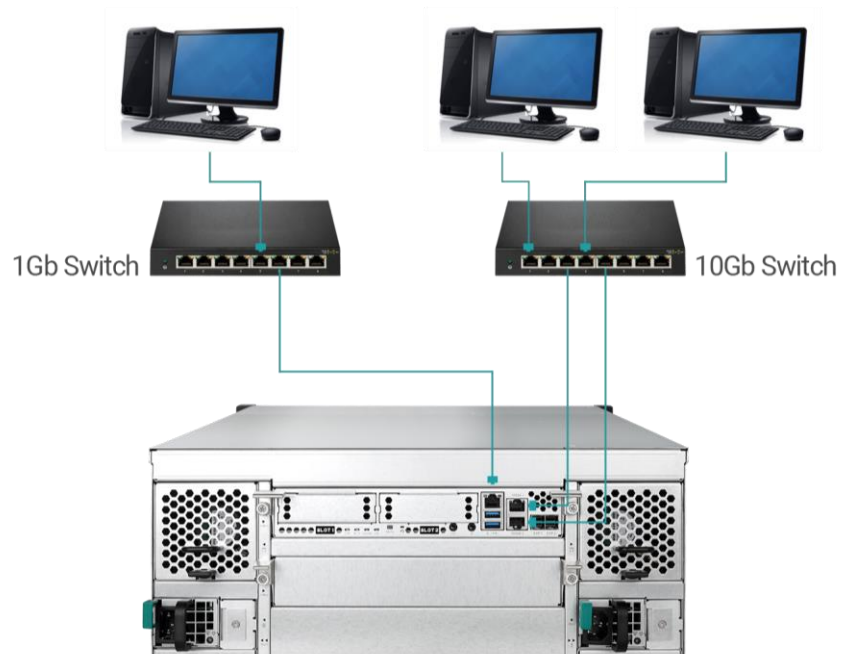
## 3.8. Connect the System to the Host

XN8024R has two on-board 10GbE and one on-board 1GbE LAN ports for host connections. You can learn more about the path configuration in cabling for XN8024R by following images:

### a. One LAN connection



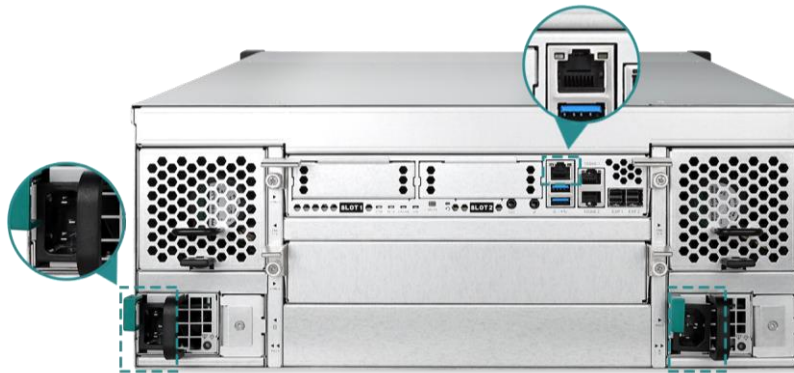
### b. Multiple LAN connections



### 3.9. Start Up Your System

Before you power on your XCubeNAS for the first time, please make sure the following tasks are done:

1. Connect one end of each power cord to the power ports located on the back of the XCubeNAS and the other end to a power outlet.
2. Connect at least one LAN cable to one of the LAN ports and the other end to your switch, router, or hub.



3. Press the power button to turn on your XCubeNAS.



Your XCubeNAS is now online and detectable from a network computer.

**INFORMATION:**

The power cord rating is the minimum requirement. The rating of the power cord that you purchase must equal to or be higher than the minimum requirement to ensure the system safety and reliability.

---

**INFORMATION:**

The Following are the operational conditions for XN8024R:

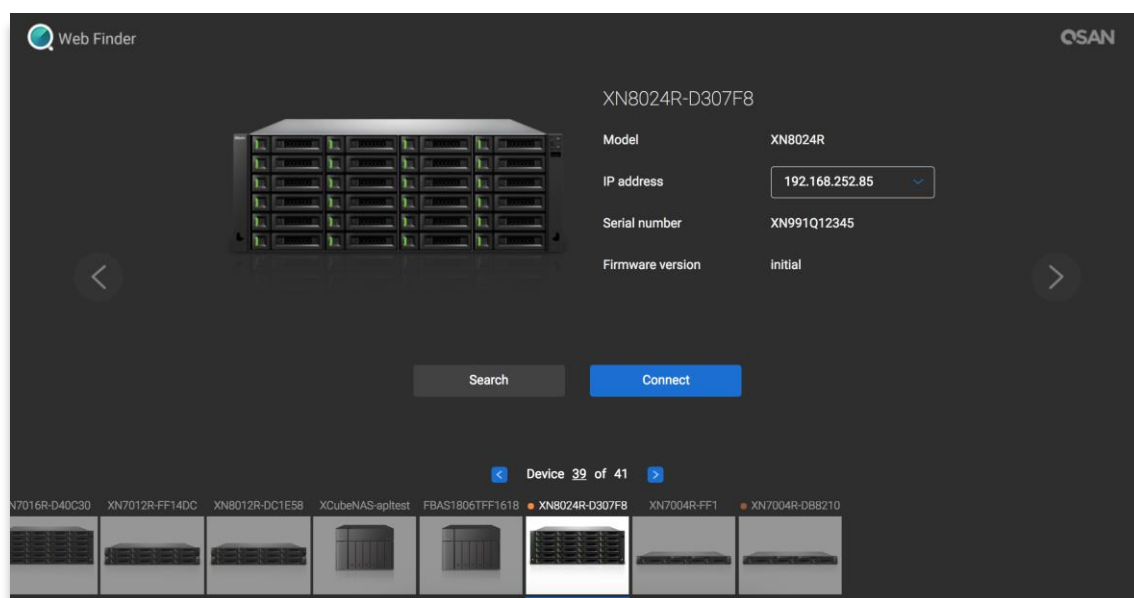
Temperature:

- Operating temperature 0 to 40°C
  - Shipping temperature -10°C to 50°C
  - Operating Relative Humidity 20% to 80% non-condensing
  - Non-Operating Relative Humidity 10% to 90%
-

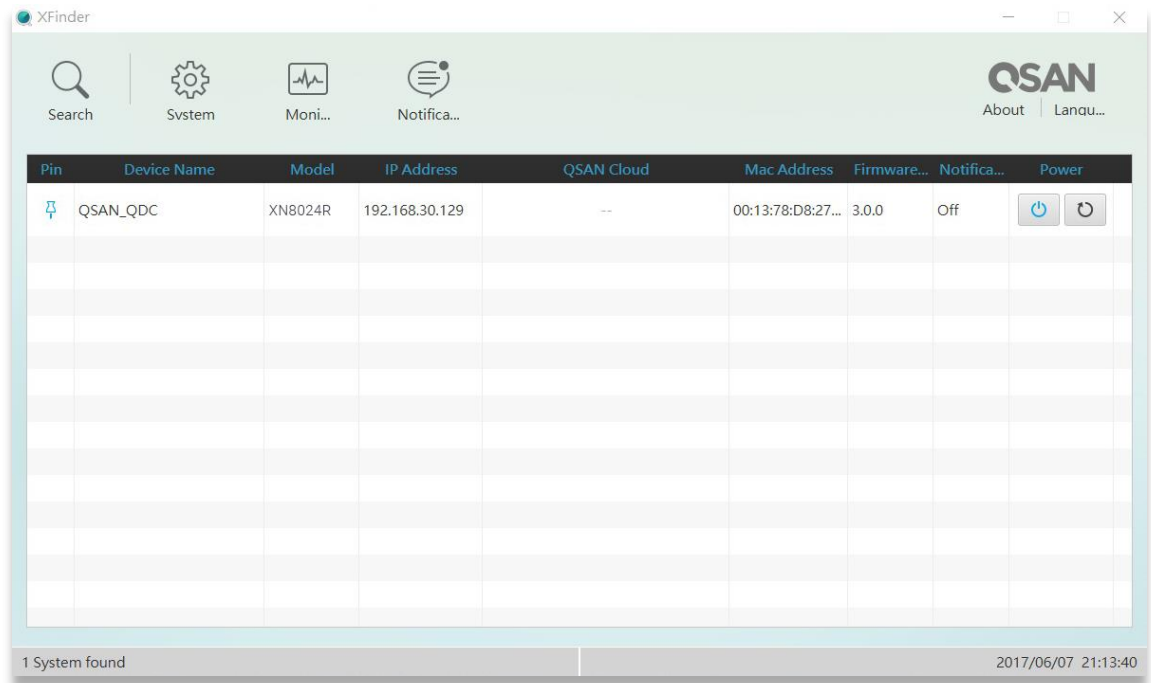
## 4. Discover and Install QSM

After hardware setup is finished, the next step is to discover the system on the network and start the initial configuration. To discover and install the QSAN Storage Manager (QSM), please follow the steps below:

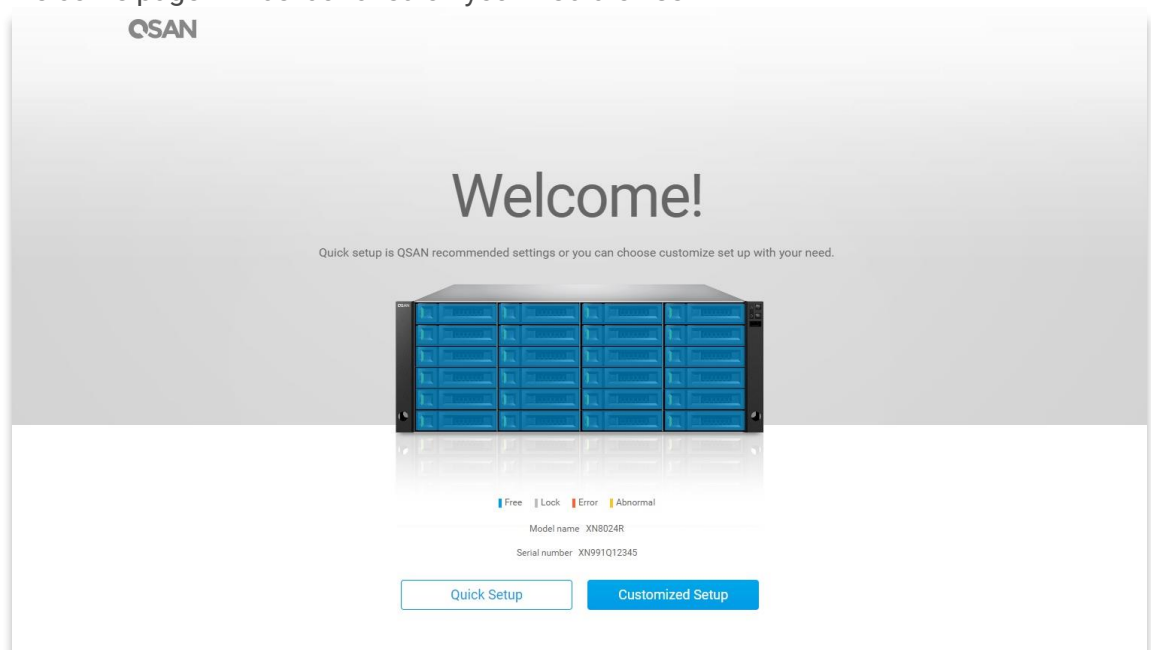
1. Power on the XCubeNAS.
2. Open a web browser on your computer connected to the same local area network as XCubeNAS, and use either of the following methods on the browser:
  - a. Use Web Finder: [find.qsan.com](http://find.qsan.com) (Please make sure the XCubeNAS has internet access ability before using the Web Finder.)



- b. If your XCubeNAS cannot be connected to the internet, please try downloading and installing XFinder application from the QSAN website to your PC:  
<https://www.qsan.com/zh-tw/download.php>



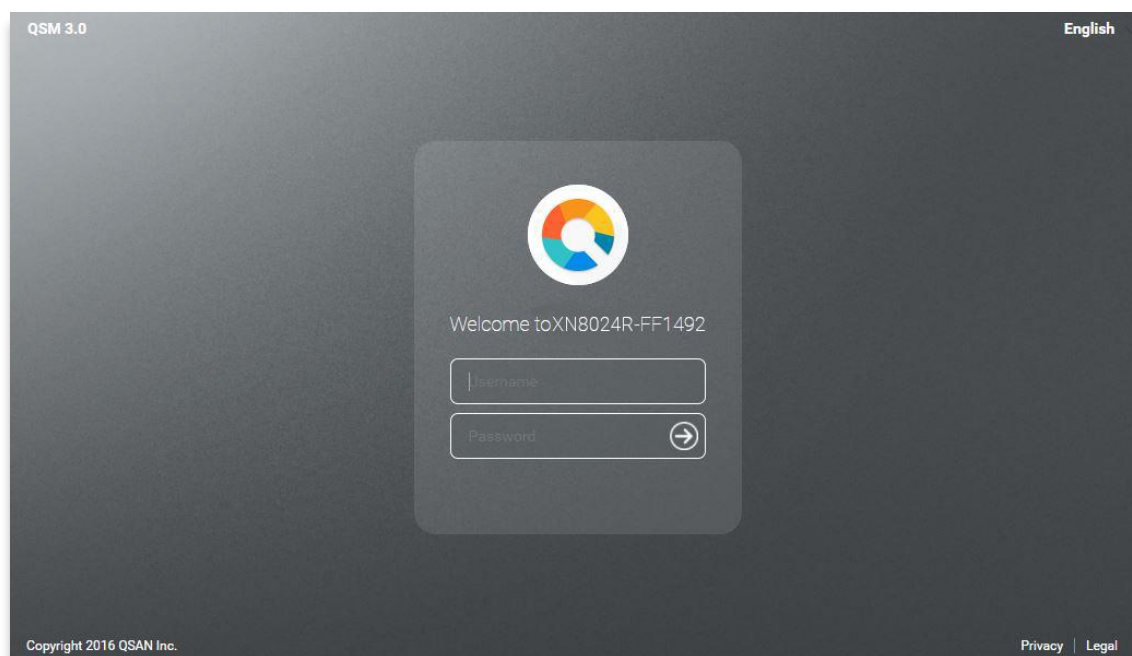
3. Click **“Connect”** on the Web Finder or double click on your XCubeNAS on the XFinder, the welcome page will be launched on your web browser.



4. Click **Quick Setup** or **Custom Setup** to start the setup process and follow the onscreen instructions.



5. If you accidentally leave the quick install page, you can always return to the setup page by go through the steps above from step 1 again.
6. After quick setup is finished, login to the QSM as “**admin**” (default account name) with the password you set on former instructions.



#### INFORMATION:

1. The XCubeNAS must be connected to the Internet to install QSM with Web Finder.
2. Both the XCubeNAS and your PC must be on the same local network.
3. If you cannot find your XCubeNAS, the default IP address for LAN 1 is 169.254.1.234.
4. If you expanded your memory or add a network expansion card earlier on, you can now check to make sure the system recognizes the new module. You can check the status by following steps:
  - a. Login to QSM as **admin** or a user belongs to the **administrator's** group.
  - b. Find the memory status in **Monitor app** → **Hardware**.

If your system cannot recognize the expanded memory or the network expansion card or failed to start up, please check again and ensure the unit is properly installed.

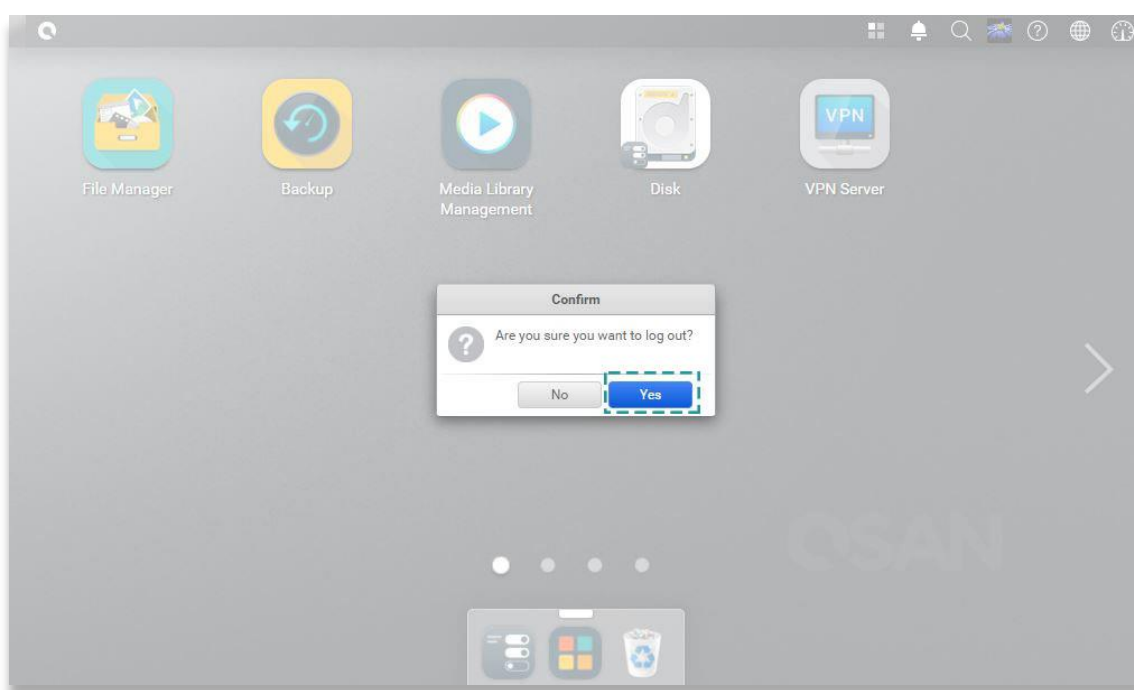
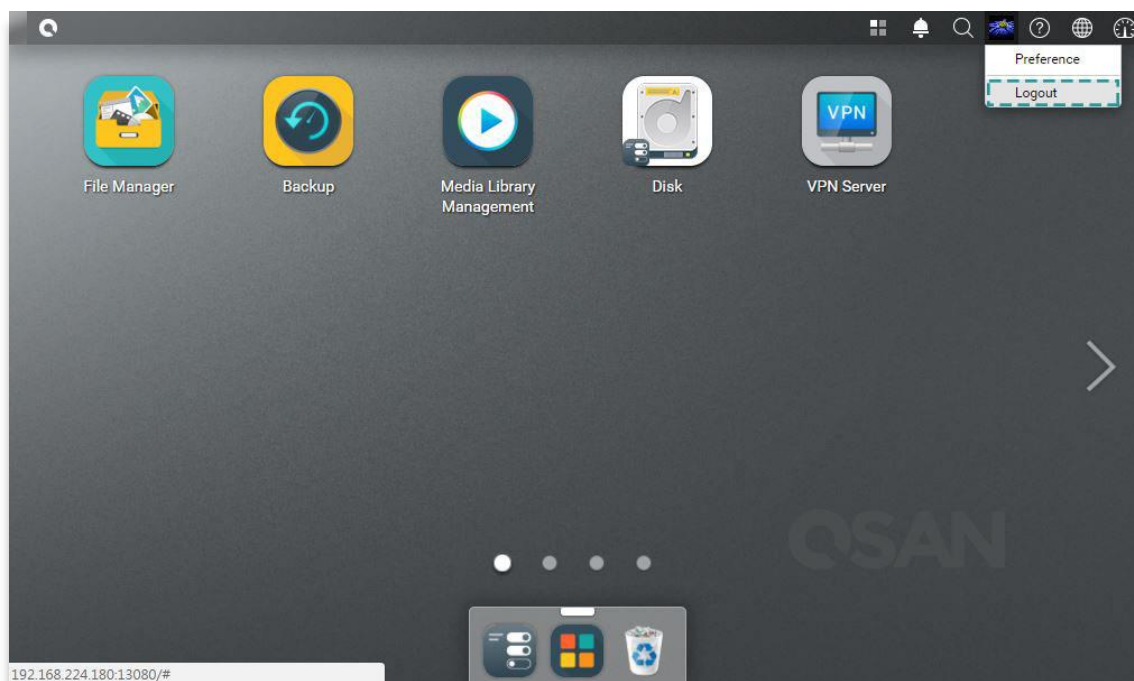
## 5. Restart/Shutdown/Logout QSM

If you want to restart, shutdown or log out QSM, please follow the steps below:

1. To restart or shutdown QSM, please click on the QSAN logo on the top left corner, then choose the option which you would like to proceed. Click **Yes** button on the confirm window.



- To log out QSM, please click **User Profile** on the top right corner, then choose **Logout**. Click **Yes** button on the confirm window.



## 6. Reset to Default

---

If you want to reset XCubeNAS to factory default, there are several options to choose from. Please follow the steps below:

Reset to default by using the reset button on the back of XCubeNAS:



1. Reset network settings: Press and hold the reset button on the rear panel for **3 seconds**, a short beep sound for 1 second will be heard. The administrator password and all the network settings will be reset, the system configuration will result in:
  - Reset Admin password to the default value: 1234.
  - All networking set to "DHCP".
  - All data service ports set to default setting (All data service enable and set to default port).
  - VLAN will be terminated.
  - Vswitch will be deleted.
  - Port trunking will be disabling.
  - After configs are deleted, restart the XCubeNAS.
  - Log out QSAN Cloud.
  - DNS settings.
  - DDNS and UPNP settings.

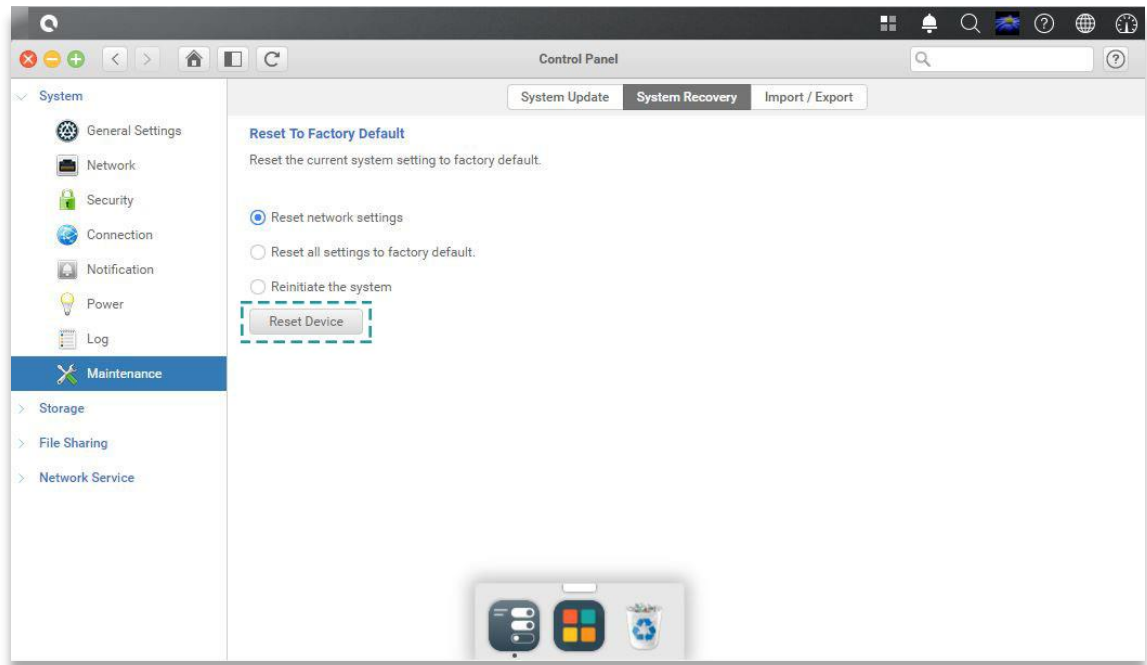
2. Reset all settings: Press and hold the reset button on the rear panel for **10 seconds**, you will hear a short beep sound at the third second and a long beep sound at the tenth second. The operating system (including reset the administrator password and all the network settings) will be reinstalled, the system configuration will result in:

- Reset all network settings to factory default.
- Reset all system settings to factory default.
- All accounts, groups, folder permission, and ACL are deleted.
- Access control lists are all deleted.
- All backup tasks are deleted.
- Cloud sync job delete.
- VPN settings are deleted.
- Web server setting are set to default.
- AntiVirus setting are deleted.
- SQL settings are set to default.
- Media Library index will be deleted.
- After configs are deleted, restart the XCubeNAS.
- Log out QSAN Cloud.

Reset to default through QSM:

You can also reset network setting or all the setting through QSM.

1. Please click **Control Panel → System → Maintenance → System Recovery**. Choose the option which you would like to proceed.
  - a. Reset network settings: The administrator password and all the network settings will be reset.
  - b. Reset all settings to factory default: The operating system (including reset the administrator password and all the network settings) will be reinstalled.
  - c. Reinitiate the system: All settings will return to factory default. The system config and all data will be deleted. The system will restart automatically and return to quick install page.



2. Click the Reset Device button to proceed.

## 7. LED Indicator Table

### 7.1. XN8024R LED Indicator Table

XN8024R features the button and indication module on both the front panel and the rear panel. Please refer to the following content for definitions of LED behaviors.

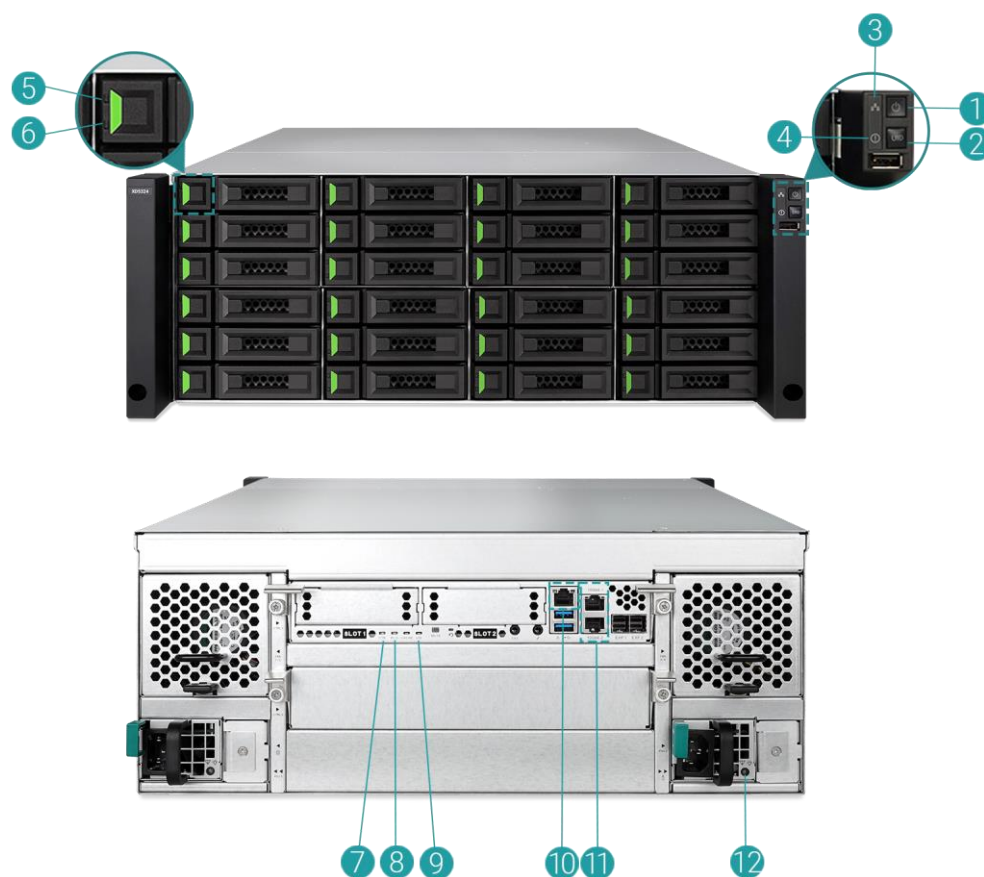


Table 7-1 Descriptions of the System Controls and Indicators LEDs

| Number | Description                | Definition   |
|--------|----------------------------|--|
| 1      | Enclosure Power Button/LED | <b>Power Button</b> <ul style="list-style-type: none"> <li>Press the button one time to turn ON or OFF the system power.</li> <li>Keep pressing for 4 seconds to force turn OFF the system power.</li> </ul> |

|   |  |  |
|---|--|--|
|   |  | <b>Power LED</b> <ul style="list-style-type: none"> <li>• <b>White</b>: power is ON (at least one power supply unit is supplying power to the system).</li> <li>• <b>White</b> flashes every 0.5 sec: the system is at the stage of starting up or shutting down, or the NAS is not configured.</li> <li>• Off: the system is shutdown.</li> </ul>   |
| 2 | Unit Identification (UID) Button/LED (front panel) | <b>UID (Unique Identity) button</b> <ul style="list-style-type: none"> <li>• Press the button one time to turn it ON; press it again to turn it OFF.</li> </ul> <b>UID (Unique Identity) LED</b> <ul style="list-style-type: none"> <li>• <b>Blue</b>: the system has been identified.</li> <li>• Off: the system has not been identified.</li> </ul>  |
| 3 | Enclosure Access LED                               | (Indicate the host interface connectivity.) <ul style="list-style-type: none"> <li>• <b>Blue</b> flashes: the host interface activity is on-going.</li> <li>• Off: no host interface activity.</li> </ul> Note: This behaviour does not include 1G port's activity.  |
| 4 | Enclosure Status LED                               | (Indicate current health status of the system.) <ul style="list-style-type: none"> <li>• <b>Amber</b>: 1) The storage folder/pool has reached its full capacity (100%). 2) The storage folder/pool is going to be full (95%). 3) The system fan is out of function. 4) A bad sector is detected on the hard disk drive. 5) One of the pool is in degraded read-only mode. 6) Hardware self-test error. e.g. PSU failed, abnormal voltage, the temperature is at critical high/low, any cooling fan module failed or removed, any pool failed or the UPS is running on batteries.</li> <li>• <b>Amber</b> flashes every 0.5 sec: firmware is upgrading, or RAID rebuilding is in a process.</li> <li>• Off: the system is healthy.</li> </ul> |
| 5 | Disk Drive Power LED                               | <ul style="list-style-type: none"> <li>• <b>Blue</b>: the disk drive is inserted and no data access.</li> </ul>  |



|    |  |  |
|----|--|--|
|    |  | <ul style="list-style-type: none"> <li>• <b>Blue</b> flashes: the disk data is being accessed.</li> <li>• Off: no disk drive is inserted.</li> </ul>   |
| 6  | Disk Drive Status LED                      | <ul style="list-style-type: none"> <li>• Off: the disk drive is healthy.</li> <li>• <b>Amber</b>: the disk drive has read/write error.</li> <li>• <b>Amber</b> flashes (interval of 0.5 sec): the disk drive is rebuilding.</li> <li>• <b>Amber</b> flashes (interval of 0.05 sec): identify a specific disk drive.</li> </ul>   |
| 7  | Controller Status LED                      | <ul style="list-style-type: none"> <li>• <b>Green</b>: The controller status is normal.</li> <li>• <b>Red</b>: The system is booting, or the controller failed.</li> </ul>   |
| 8  | Master / Slave LED                         | <ul style="list-style-type: none"> <li>• Always showing <b>green</b> light.</li> </ul>   |
| 9  | Unit Identification (UID) LED (rear panel) | <ul style="list-style-type: none"> <li>• <b>Blue</b>: the system has been identified.</li> <li>• Off: the system has not been identified.</li> </ul>   |
| 10 | 1G LAN Port                                | <p><b>Speed (Left):</b></p> <ul style="list-style-type: none"> <li>• <b>Amber</b>: 1000Mbps connection.</li> <li>• <b>Green</b>: 100Mbps connection.</li> </ul> <p><b>Activity/Link (Right):</b></p> <ul style="list-style-type: none"> <li>• Light OFF: No connection.</li> <li>• Light ON: Connected to the internet</li> <li>• Light flashes: when data is being accessed.</li> </ul> |
| 11 | 10G LAN Port                               | <p>10G dual port connector embedded 2 LEDs:<br/>Left LED/Right LED</p> <ul style="list-style-type: none"> <li>• Left LED to indicate upper port.</li> <li>• Right LED to indicate lower port.</li> <li>• <b>Amber</b> flashes: when accessing.</li> </ul>  |
| 12 | PSU LED                                    | <ul style="list-style-type: none"> <li>• OFF: No AC power to power supplies / AC present.</li> <li>• <b>Green</b>: PSU is on and OK.</li> <li>• <b>Green</b> flashes: PSU is off, 5VB is on.</li> <li>• <b>Amber</b>: Power supply failure for main output.</li> <li>• <b>Amber</b> flashes: Power supply showing warning event such as high temperature or high power.</li> </ul>       |

## 7.2. Host Card LED Indicator Table

XN8024R supports three optional host cards, including 10GbE via SFP+ (HQ-10G4S2), 10GBASE-T (HQ-10G2T), or 1GBASE-T (HQ-01G4T) host cards. Please refer to the following content for definitions of LED behaviors.

### HQ-01G4T (1GBASE-T)

| Number | Definition   |
|--------|--|
| 1      | <b>Link Status LED (Left):</b> <ul style="list-style-type: none"> <li><b>Green</b> flashes: Asserted when the link is established, and packets are being transmitted along with any receive activity (Access).</li> <li>OFF: No link is detected, or link fails.</li> </ul>        |
| 2      | <b>Speed LED (Right):</b> <ul style="list-style-type: none"> <li><b>Amber</b>: Asserted when a 1G link is established and maintained.</li> <li><b>Green</b>: Asserted when a 100M link is established and maintained.</li> <li>OFF: No link is detected, or link fails.</li> </ul> |

### HQ-10G4S2 (10GbE via SFP+)

| Number | Definition   |
|--------|--|
| 1      | <b>Link Status LED (Left):</b> <ul style="list-style-type: none"> <li><b>Green</b> flashes: Asserted when the link is established, and packets are being transmitted along with any receive activity (Access).</li> <li>OFF: No link is detected, or link fails.</li> </ul>      |
| 2      | <b>Speed LED (Right):</b> <ul style="list-style-type: none"> <li><b>Blue</b>: Asserted when a 10G link is established and maintained.</li> <li><b>Amber</b>: Asserted when a 1G link is established and maintained.</li> <li>OFF: No link is detected, or link fails.</li> </ul> |

### HQ-10G2T (10GBASE-T)

| Number | Definition  |
|--------|---|
| 1      | <b>Link Status LED (Left):</b> <ul style="list-style-type: none"> <li><b>Green</b> flashes: Asserted when the link is established, and packets are being transmitted along with any receive activity (Access).</li> <li>OFF: No link is detected, or link fails.</li> </ul>       |
| 2      | <b>Speed LED (Right):</b> <ul style="list-style-type: none"> <li><b>Green</b>: Asserted when a 10G link is established and maintained.</li> <li><b>Amber</b>: Asserted when a 1G link is established and maintained.</li> <li>OFF: No link is detected, or link fails.</li> </ul> |

## 8. Buzzer Indicator Table

| Number | Beep Sound              | No. of Times                                   | Description  |
|--------|-------------------------|--|--|
| 1      | Short beep<br>(0.5 sec) | 1  | <ul style="list-style-type: none"> <li>The XCubeNAS is ready (finish start up).</li> <li>The XCubeNAS is being shut down (software shutdown).</li> <li>The user presses the reset button to reset the NAS.</li> <li>The system firmware has been updated.</li> <li>USB drive is removed.</li> <li>The user starts hard drive rebuilding.</li> </ul>  |
| 2      | Long beep<br>(1.5 sec)  | Beep until event finishes, interval of 0.5 sec | <ul style="list-style-type: none"> <li>1) The system pool has reached its full capacity (100%). 2) The system pool is going to be full (95%). 3) The system fan is out of function. 4) A bad sector is detected on the hard disk drive or hard disk failed. 5) One of the pool is in degraded mode. 6) Hardware self-test error. e.g. PSU failed, abnormal voltage, the temperature is at critical high/low, any cooling fan module failed or removed, any pool failed.</li> </ul> |

**Note:** If one event has triggered the beep sound, the next event will not trigger the beep sound until the previous event has finished.

**Note 2:** The beep sound will not be triggered if buzzer function is disabled from the QSM. You can check the error messages through the **Notification Center** on QSM.

## 9. Deployment Topology

This chapter will show detailed deployment topology for XCubeNAS. You can build up a deployment plan for your XCubeNAS storage environment. It supports a maximum of up to 232 drives for the system storage space expansion; both single and dual path cabling are supported.

### 9.1. Expansion Configuration Rules

The table below shows the rule of configuration for XCubeNAS and enclosure units. Please refer to the table below for a maximum number of expansion enclosures and disk drives prior to performing system deployment.

Table 9-1 XCubeNAS System and Expansion Enclosure Configuration Rules

| NAS Model | Expansion Enclosures | Max. No. of Expansion Units | Max. No. of Disk Drives | Max. Raw Capacity (HDD: 12 TB) |
|-----------|----------------------|-----------------------------|-------------------------|--------------------------------|
| XN8024R   | XD5312D (2U 12Bay)   | 8                           | 24+12x8=120             | 1,440 TB                       |
|           | XD5316D (3U 16Bay)   | 8                           | 24+16x8=152             | 1,824 TB                       |
|           | XD5324D (4U 24bay)   | 8                           | 24+24x8=216             | 2,592 TB                       |
|           | XD5326D (2U 26bay)   | 8                           | 24+26x8=232             | 464 TB                         |



**INFORMATION:**

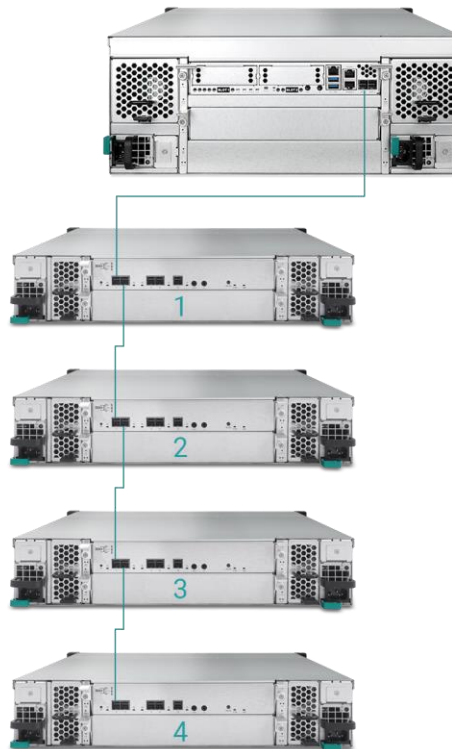
See the configuration of XCubeNAS enclosure units on [Appendix: Expansion Enclosure List](#)

## 9.2. Cabling the System

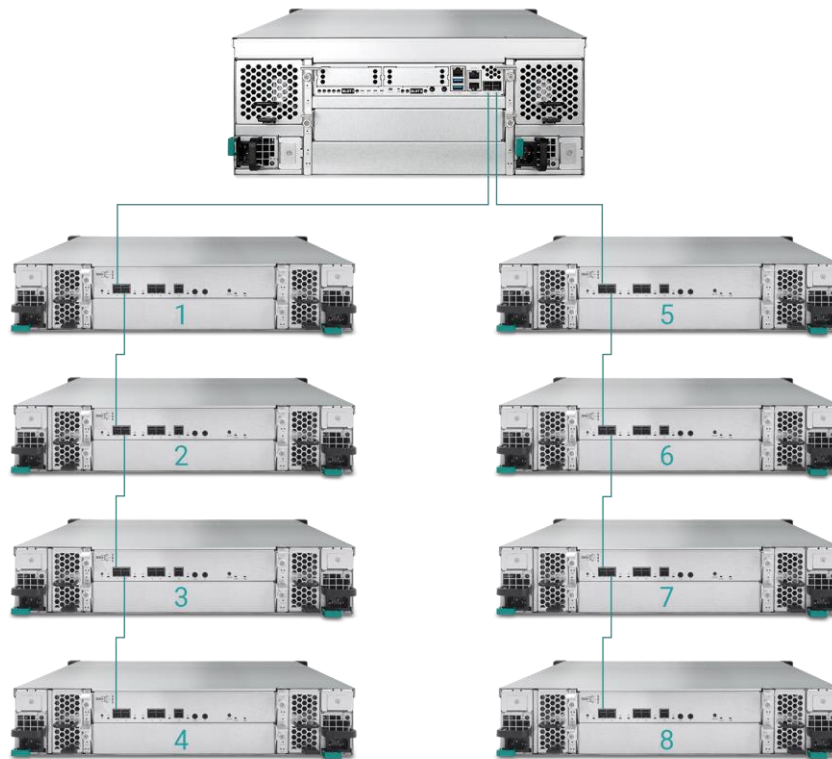
Please follow the steps below to expand your storage space:

1. Connect your XCubeNAS to one or more expansion unit(s) via the SAS port and SAS cable(s). The following images illustrate some examples of expansion types for your system:

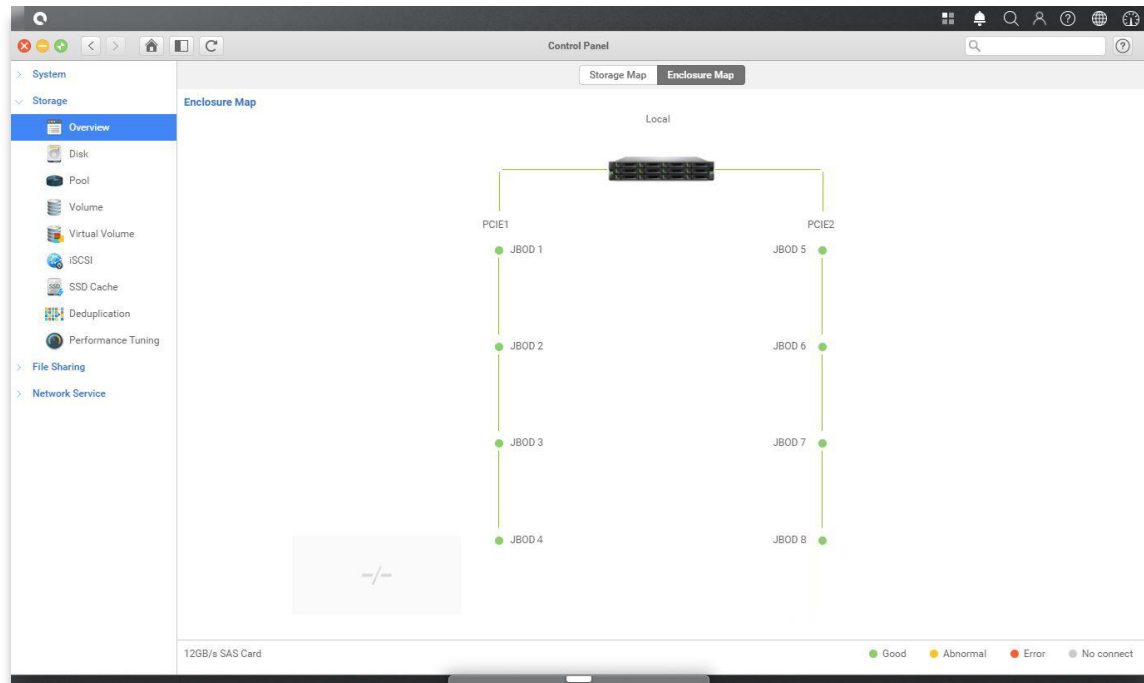
- a. **Single Path Expansion**



## b. Dual Path Expansion



2. After connected to the expansion units, you can check the deployment topology on QSM → **Control Panel** → **Storage app** → **Overview** → **Enclosure Map**.



3. The status of each expansion unit will be shown on QSM → **Monitor app** → **Hardware**.

Monitor

Resource Hardware Service Network

Hardware information Add to Dashboard

Type JBOD 1

JBOD MAC/SAS 001378d30498

Model J700

Rear panel ID QW424

System uptime 2017/01/19

Firmware version 1.0.0

System health Good

PSU 1 Good

PSU 2 Good

FAN 1 speed 5460 RPM

FAN 2 speed 5460 RPM

FAN 3 speed 5460 RPM

FAN 4 speed 5460 RPM

Note: Please see the enclosure map [here](#).

| Item                         | Temperature (°C/°F) |
|------------------------------|---------------------|
| Ctrl 1 Backend Connector     | 31.0 / 87.8         |
| Ctrl 1 Location Bottom Right | 41.0 / 105.8        |
| Ctrl 1 SAS Wide Port 1       | 32.0 / 89.6         |
| Ctrl 1 SAS Expander          | 64.0 / 147.2        |
| Ctrl 2 Backend Connector     | 31.0 / 87.8         |
| Ctrl 2 Location Bottom Right | 41.0 / 105.8        |
| Ctrl 2 SAS Wide Port 1       | 32.0 / 89.6         |
| Ctrl 2 SAS Expander          | 64.0 / 147.2        |
| Backplane Location Left      | 32.0 / 89.6         |
| Backplane Location Middle    | 34.0 / 93.2         |
| Backplane Location Right     | 32.0 / 89.6         |
| Disk 1                       | 32.0 / 89.6         |
| Disk 2                       | N/A                 |
| Disk 3                       | 30.0 / 86.0         |
| Disk 4                       | 29.0 / 84.2         |
| Disk 5                       | 29.0 / 84.2         |
| Disk 6                       | N/A                 |
| Disk 7                       | 31.0 / 87.8         |

## 10. Quick Maintenance

---

This chapter provides quick maintenance and instruction of removing/installing FRU (Field Replaceable Unit) or optional components of XCubeNAS. Any of the FRU components can be hot swapped and replaced with zero downtime in the rare event of a component failure. If you encounter any issues caused by FRU components while operating the XCubeNAS, please refer to related section and follow the quick troubleshooting procedures step by step.

**CAUTION:**

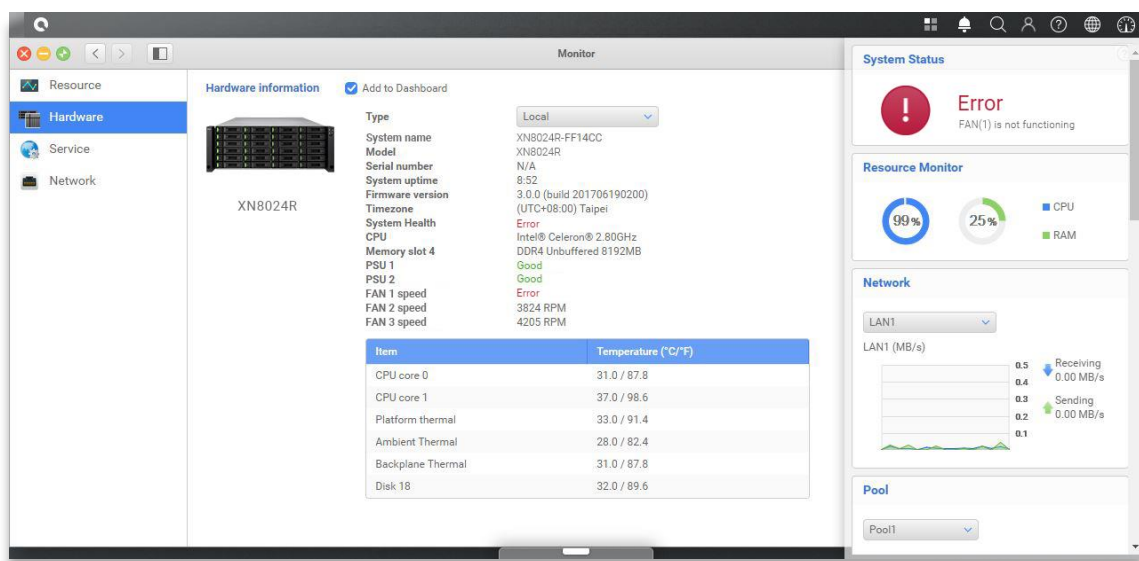
We recommend that all maintenance is carried out by a certified technician. Do not attempt to carry out any maintenance outside of those outlined in the following section of this guide. System damage due to incorrect maintenance or FRU replacement can affect your product warranty. If you are unsure of the problem related to your XCubeNAS system, we strongly recommend you contact or get help from QSAN support team:

- Via the Web: [http://www.qsan.com/en/contact\\_support.php](http://www.qsan.com/en/contact_support.php)
  - Via Telephone: +886-2-7720-2118 extension 136
  - (Service hours: 09:30 - 18:00, Monday - Friday, UTC+8)
  - Via Skype Chat, Skype ID: qsan.support
  - (Service hours: 09:30 - 02:00, Monday - Friday, UTC+8, Summertime: 09:30 - 01:00)
  - Via Email: [support@qsan.com](mailto:support@qsan.com)
-

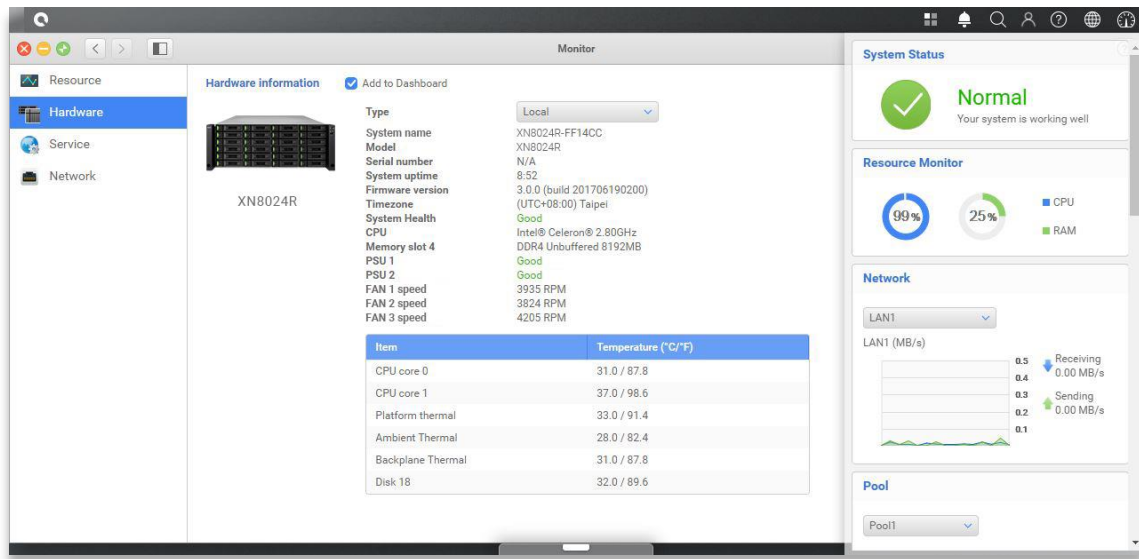


## 10.1. Replace Fan Module

The XCubeNAS comes with tool-less fan module which can be easily changed when the fan failed. If a fan failed to function, you can check the fan status on QSM. Please go to **Monitor app** → **Hardware**. The System Health and Fan Speed will show “**Error**” if failed. You can also check the status by clicking **Dashboard** on the top right corner on the desktop. The System Status will also display “**Error**” and its message, “Fan(No.) is not functioning”.



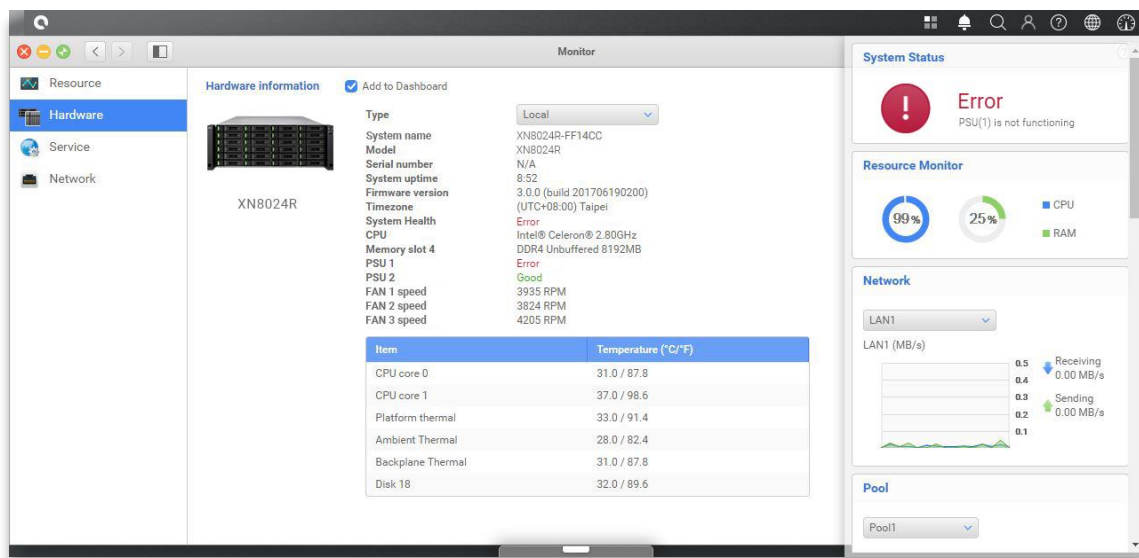
If you see the error message shown above, which means your fan module needed to be replaced immediately. To replace the malfunction fan module, please refer to [chapter 3.4 Replace System Fan](#). After the new fan module is successfully installed, you can see the fan speed displaying its Revolutions Per Minute(RPM) value on QSM.



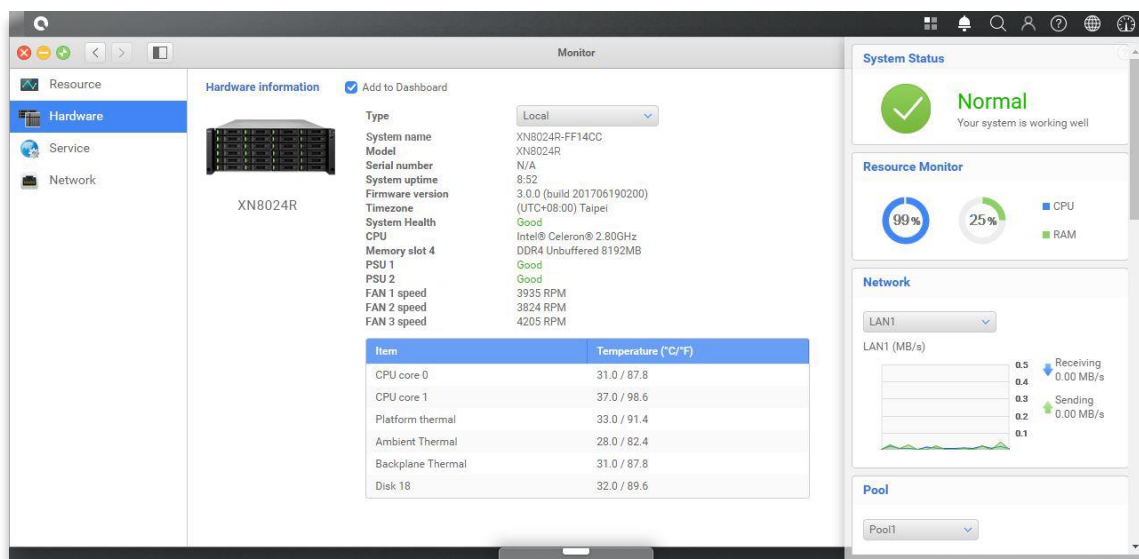
## 10.2. Replace Power Supply Unit

XCubeNAS comes with two redundant Power Supply Units (PSU) that can be hot swapped it when the PSU is not functioning. If a PSU or its fan failed to function, you can check the PSU status in two ways:

1. On PSU: the PSU LED will turn to color **amber**.
2. In QSM: Please go to **Monitor app** → **Hardware**. The PSU status will show **"Error"** if failed. You can also check the status by clicking **Dashboard** on the top right corner on the desktop. The System Status will also display **"Error"** and its message, "PSU(No.) is not functioning".



If you see the error message shown above, which means your PSU has encountered an issue and need to be replaced immediately. To replace the malfunction PSU, please refer to [chapter 3.5 Replace Malfunctioning PSU](#). After the new PSU is successfully installed, the PSU status LED will be **green** and you can see the PSU status displaying “**Good**” on QSM.



## 11. Support and Other Resources

---

### 11.1. Getting Technical Support

After installing your device, locate the serial number on the sticker located on the side of the chassis and register your product at [partner.qsan.com/](http://partner.qsan.com/) (End-User Registration). We recommend registering your product in QSAN partner website for firmware updates, document download, and latest news in eDM. To contact QSAN Support, please use the following information.

1. Via the Web: [http://www.qsan.com/en/contact\\_support.php](http://www.qsan.com/en/contact_support.php)
2. Via Telephone: +886-2-7720-2118 extension 136  
(Service hours: 09:30 - 18:00, Monday - Friday, UTC+8)
3. Via Skype Chat, Skype ID: qsan.support  
(Service hours: 09:30 - 02:00, Monday - Friday, UTC+8, Summertime: 09:30 - 01:00)
4. Via Email: [support@qsan.com](mailto:support@qsan.com)

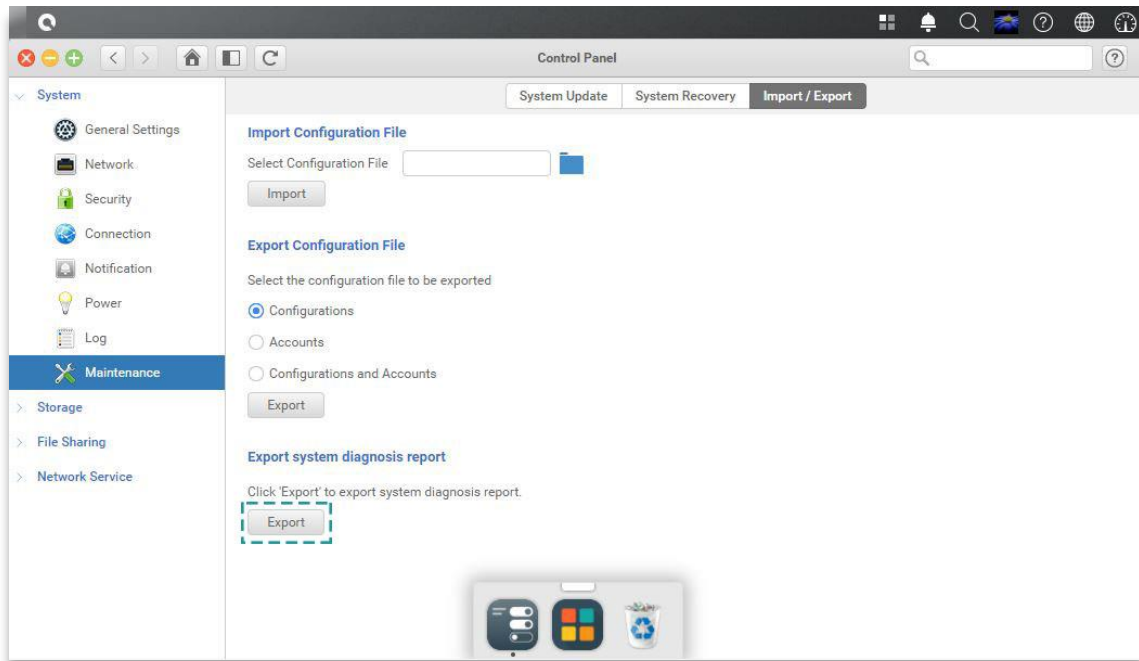
#### Information to collect

1. Product name, model or version, and serial number
2. Firmware version
3. Error messages or screenshot images
4. Product-specific reports and logs
5. Add-on products or components installed
6. Third-party products or components installed

#### Information for Technical Support

The following system information is necessary for technical support, please refer to following for what and where to get the information of your XCubeNAS XN8024R model.

If the technical support requests you to download the service log, please navigate to the QSM UI → **Control Panel** → **System** → **Maintenance** → **Import/Export** → **Export system diagnosis report**, and then click the **Export** button.



## 11.2. Documentation Feedback

QSAN is committed to providing documentation that meets and exceeds your expectations. To help us improve the documentation, email any errors, suggestions, or comments to [docsfeedback@qsan.com](mailto:docsfeedback@qsan.com).

When submitting your feedback, including the document title, part number, revision, and publication date located on the front cover of the document.

## Appendix

---

### End-User License Agreement (EULA)

Please read this document carefully before you use our product or open the package containing our product.

YOU AGREE TO ACCEPT TERMS OF THIS EULA BY USING OUR PRODUCT, OPENING THE PACKAGE CONTAINING OUR PRODUCT OR INSTALLING THE SOFTWARE INTO OUR PRODUCT. IF YOU DO NOT AGREE TO TERMS OF THIS EULA, YOU MAY RETURN THE PRODUCT TO THE RESELLER WHERE YOU PURCHASED IT FOR A REFUND IN ACCORDANCE WITH THE RESELLER'S APPLICABLE RETURN POLICY.

#### **General**

QSAN Technology, Inc. ("QSAN") is willing to grant you ("User") a license of software, firmware and/or other product sold, manufactured or offered by QSAN ("the Product") pursuant to this EULA.

#### **License Grant**

QSAN grants to User a personal, non-exclusive, non-transferable, non-distributable, non-assignable, non-sub-licensable license to install and use the Product pursuant to the terms of this EULA. Any right beyond this EULA will not be granted.

#### **Intellectual Property Right**

Intellectual property rights relative to the Product are the property of QSAN or its licensor(s). The user will not acquire any intellectual property by this EULA.

### **License Limitations**

User may not, and may not authorize or permit any third party to (a) use the Product for any purpose other than in connection with the Product or in a manner inconsistent with the design or documentations of the Product; (b) license, distribute, lease, rent, lend, transfer, assign or otherwise dispose of the Product or use the Product in any commercial hosted or service bureau environment; (c) reverse engineer, decompile, disassemble or attempt to discover the source code for or any trade secrets related to the Product, except and only to the extent that such activity is expressly permitted by applicable law notwithstanding this limitation; (d) adapt, modify, alter, translate or create any derivative works of the Licensed Software; (e) remove, alter or obscure any copyright notice or other proprietary rights notice on the Product; or (f) circumvent or attempt to circumvent any methods employed by QSAN to control access to the components, features or functions of the Product.

### **Disclaimer**

QSAN DISCLAIMS ALL WARRANTIES OF PRODUCT, INCLUDING BUT NOT LIMITED TO ANY MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, WORKMANLIKE EFFORT, TITLE, AND NON-INFRINGEMENT. ALL PRODUCTS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND. QSAN MAKES NO WARRANTY THAT THE PRODUCT WILL BE FREE OF BUGS, ERRORS, VIRUSES OR OTHER DEFECTS.

IN NO EVENT WILL QSAN BE LIABLE FOR THE COST OF COVER OR FOR ANY DIRECT, INDIRECT, SPECIAL, PUNITIVE, INCIDENTAL, CONSEQUENTIAL OR SIMILAR DAMAGES OR LIABILITIES WHATSOEVER (INCLUDING, BUT NOT LIMITED TO LOSS OF DATA, INFORMATION, REVENUE, PROFIT OR BUSINESS) ARISING OUT OF OR RELATING TO THE USE OR INABILITY TO USE THE PRODUCT OR OTHERWISE UNDER OR IN CONNECTION WITH THIS EULA OR THE PRODUCT, WHETHER BASED ON CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY OR OTHER THEORY EVEN IF QSAN HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

### **Limitation of Liability**

IN ANY CASE, QSAN'S LIABILITY ARISING OUT OF OR IN CONNECTION WITH THIS EULA OR THE PRODUCT WILL BE LIMITED TO THE TOTAL AMOUNT ACTUALLY AND ORIGINALLY PAID BY CUSTOMER FOR THE PRODUCT. The foregoing Disclaimer and Limitation of Liability will apply to the maximum extent permitted by applicable law. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the exclusions and limitations set forth above may not apply.

## **Termination**

If User breaches any of its obligations under this EULA, QSAN may terminate this EULA and take remedies available to QSAN immediately.

## **Miscellaneous**

- QSAN reserves the right to modify this EULA.
- QSAN reserves the right to renew the software or firmware anytime.
- QSAN may assign its rights and obligations under this EULA to any third party without condition.
- This EULA will be binding upon and will inure to User's successors and permitted assigns.
- This EULA shall be governed by and constructed according to the laws of R.O.C. Any disputes arising from or in connection with this EULA, User agree to submit to the jurisdiction of Taiwan Shilin district court as first instance trial.



## Recommended Optional Module List

| Model name     | P/N            | Product Name   |
|----------------|----------------|--|
| DIM-D44GB      | 92-DIMD404G-00 | RAM - DDR4 4G ECC U-DIMM                                   |
| DIM-D48GB      | 92-DIMD408G-00 | RAM - DDR4 8G ECC U-DIMM                                   |
| DIM-D416GB     | 92-DIMD416G-00 | RAM - DDR4 16G ECC U-DIMM                                  |
| DIM-D432GB     | 21-44410324-00 | RAM - DDR4 32G ECC U-DIMM                                  |
| SLR-RM3640     | 34-24R2U001-00 | Rail kit for XCubeNAS                                      |
| HQ-10G4S2      | 90-HQ10G4S2-00 | 4-port 10GbE iSCSI Host Card (SFP+)                        |
| HQ-10G2T       | 92-HCQ010T0-20 | 2-port 10GBASE-T iSCSI Host Card (RJ45)                    |
| HQ-01G4T       | 90-HQ01G4T0-00 | 4-port 1GBASE-T iSCSI Host Card (RJ45)                     |
| CBL-12SH150    | 18-0815JP2U-70 | SAS 12G cable (SFF-8644 to SFF-8644), for HBA only, 150 cm |
| GBC-SFP+10Gb-F | 90.GBIC0.10G00 | 10GBASE-SR SFP+ Optical Transceiver                        |

## Expansion Enclosure List

| Expansion Enclosures   | XD5312-D<br>XD5312-S               |
|--|------------------------------------|
| <b>Configurations</b>  | Single Controller/Dual Controllers |
| <b>Host Wide Ports Per System</b>                              | 10 x 12Gb/s SAS<br>5 x 12 Gb/s SAS |
| <b>Enclosures</b>  | LFF 2U12                           |
| <b>No. of Hard Drives</b>                                      | 12                                 |
| <b>Hard Drive Interfaces</b><br>12Gb/s<br>6Gb/s                | SAS, NL SAS, SSD SAS, SATA*, SSD   |
| <b>Scalability</b><br><b>Max Drives</b><br><b>Max Capacity</b> | 450<br>3.6PB                       |
| <b>Dimension</b><br><b>(H x W x D)(mm)</b>                     | 88 x 438 x 515                     |
| <b>Topologies</b>  | Cascade, Reverse, Tree             |